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Island Harvests: The Far East

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ISLAND HARVESTS: THE FAR EAST

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LONGMANS

This Book Belongs to
PEACE RIVER SCHOOL DIVISION No. 10

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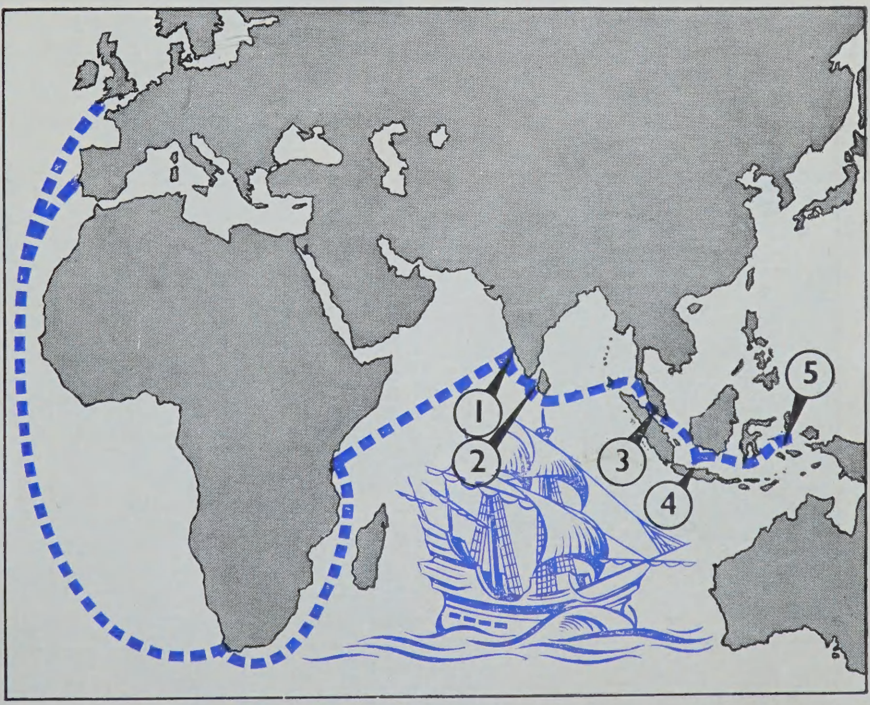
ISLAND HARVESTS

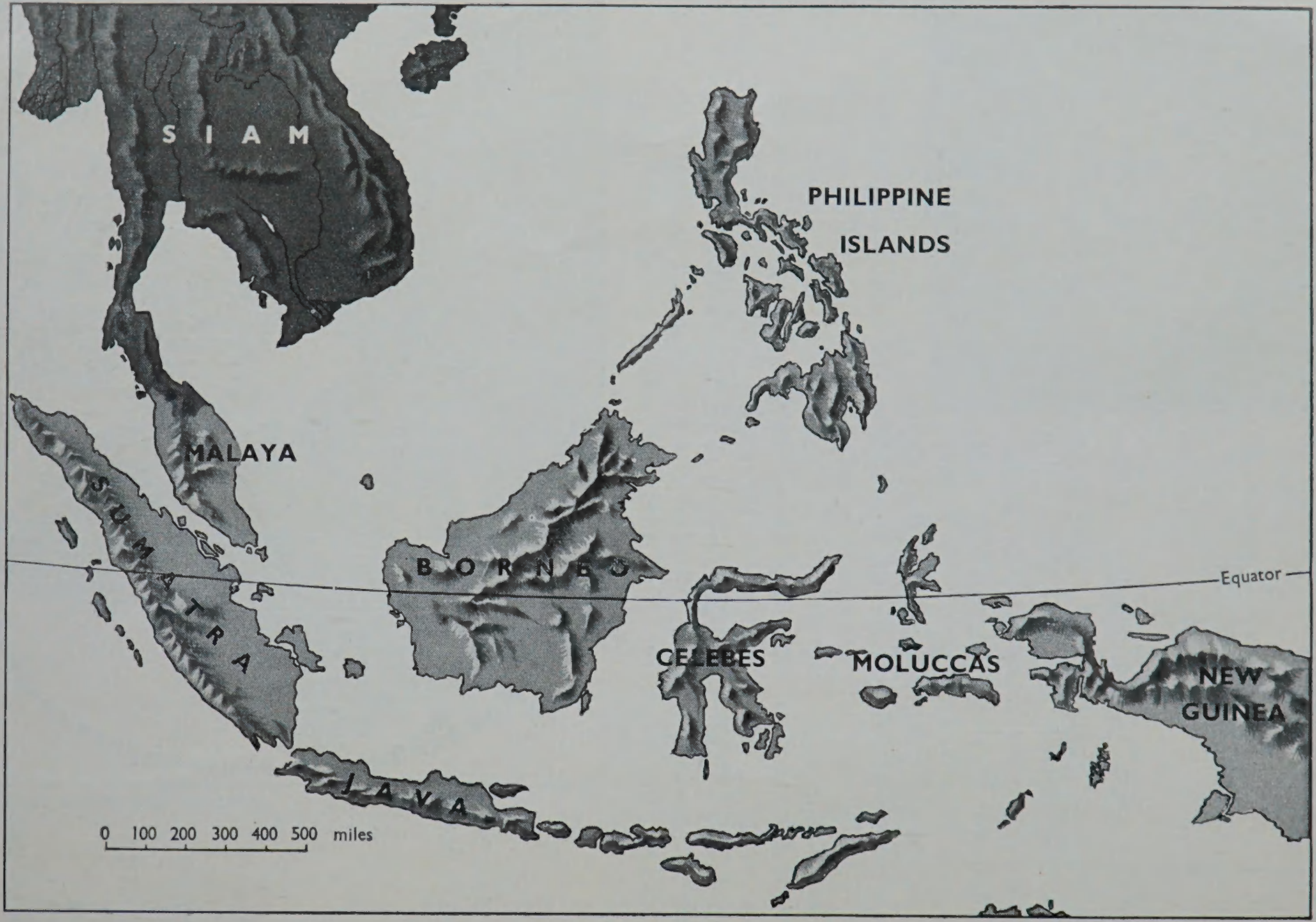
THE FABLED EAST

EUROPEANS heard stories of the wealth and beauty of the islands of the East long before they saw them with their own eyes. Even the ancient Greeks had heard of Ceylon, its gardens and palaces, its pearls and precious stones. The stories told by Arab sailors or Persian camel-drivers were retold in the markets of the Mediterranean.

Here surely was a Paradise on earth, where graceful palms lined shores of golden sand on which the waves of an ever-blue sea broke and sparkled in the sunshine. In these lands of pleasant warmth by day, of cool breezes by night, gorgeous birds and brilliant flowers brightened gardens, and trees furnished fruits and spices at all seasons. Their people were gentle and peaceful folk, skilful and willing workers, who built marvellous palaces and filled

1. THE WAY TO THE SPICE ISLANDS.





2. THE EAST INDIES AND THE PHILIPPINES. From their shapes and arrangement you can see that many are the crests of mountain ranges rising from the sea bed.

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them with beautiful furniture. Their ceremonial clothes were far finer than any western worker could produce, while gold was plentiful enough to be used to gild the temple roofs, and their rulers' dress sparkled with rich rubies and emeralds.

It was the supposed wealth of these lands rather than their beauty that brought the European discoverers to their shores. Vasco da Gama's voyage to India showed that there was a sea route to the East. But this was only the first step. He learned from merchants in the Indian markets that pearls and the fragrant cinnamon bark were brought there from Ceylon. There were Arab ships in the harbours that brought pepper and ginger from Sumatra, and other spices from still farther east. So the later Portuguese navigators pushed on—first to Ceylon and then to Malaya, Sumatra and Java. Finally their search ended in the Moluccas, the Spice Islands, where cloves and nutmegs grew.

Today the spice trade is no longer of much account. The island harvests are different now but are of far greater value. From their plantations the western world gathers most of its rubber, much tea, coffee and sugar, and the products of the coconut palm. Instead of pearls from their seas and precious stones from their mines, the search is now for oil and tin.

The main route by which these products are brought to Europe is no longer Vasco da Gama's route around the Cape of Good Hope but the shorter way through the Suez Canal. Many of them are also carried across the Pacific Ocean to North America, or southward to Australia and New Zealand.

This Book
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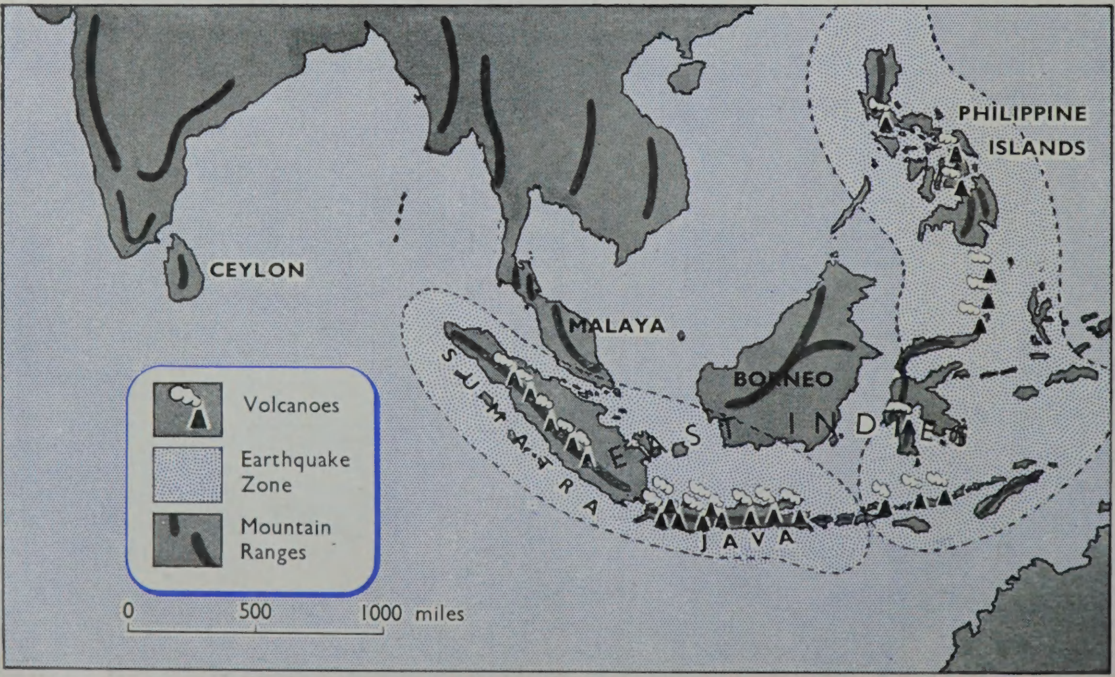
THE eastern islands are in three main groups—Ceylon, the East Indies and the Philippines. Malaya, though not an island, is almost one—it is a *peninsula*—and is so like these islands that it can be included with them. Though the islands are similar in many ways they differ in others. Ceylon is clearly a cut-off portion of India, while Malaya and the East Indies continue out into the sea the mountain ranges of south-east Asia. The Philippines form one of the *festoons* or curved lines of islands that lie off the coasts of eastern Asia.

Perhaps the most important way in which the groups are alike is in their nearness to the equator. They all therefore have hot climates. None experiences anything that could be called a winter season or even a cool season. These island lands are not, however, nearly so hot as many other lands in the same latitudes. This is because the winds that sweep over them have all crossed seas cooler than the land. The sea breezes come about the middle of the day when the sun is most powerful.

3. THE VOLCANIC BELT. The many volcanoes and earthquake shocks show that the wrinkling of the earth's crust which formed the outer islands is not yet over.

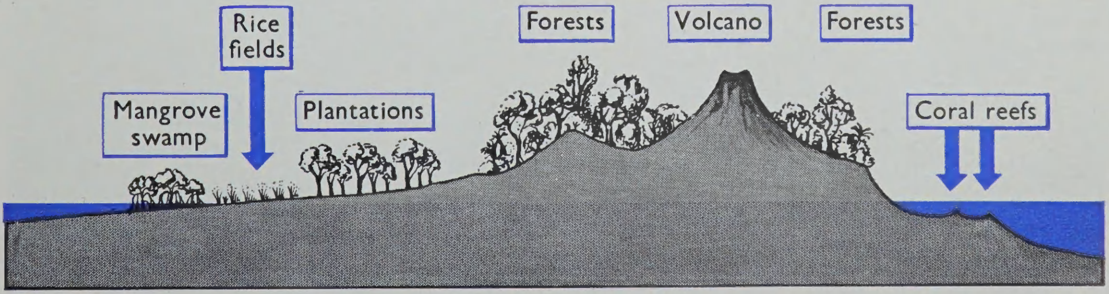


Like all other equatorial lands the islands have abundant rains. So plants grow quickly all the year round. Jungle and forest cover the ground and within their shade the air is hot and damp. Insects, large and small, are numerous, from gaily-coloured butterflies nearly a foot across to tiny flies that sting and often carry disease, while ants build huge ant-heaps in the forests and eat up much of any settler's possessions.

Nearly all the islands are mountainous. Rapid streams go tumbling down through narrow valleys in the hills. Many of them have carried so much mud and sand in the long years they have flowed to the sea that they have built out marshy plains into the waters. All along such shores there are mangrove forests, unhealthy places where crocodiles lie half-hidden in the muddy pools. Where the mountains come near the sea the coasts have high cliffs with little sandy bays between the headlands. In clear shallow waters live the tiny coral animals. They grow in groups or colonies, each building for itself a little cell like those in a honeycomb. In time the coral masses may form small islands or rocky ridges, called *reefs*, running along the coasts. These reefs are dangerous to ships. Luckily they usually reach quite near the surface so the waves breaking upon them show their positions.

For the islanders the seas around them are as important as the land. From the shallow seas they secure one of their largest food harvests—fish. The seas are the islanders' highways, much easier to use than the jungle paths and mountain tracks inland. The seas provide a meeting place and market place for the islanders, and also for all the many peoples who have come from other lands to seek a share in the riches of the islands.

4. ACROSS JAVA. The section shows how conditions change from north to south across the island. Because of the heat and heavy rains trees grow everywhere except on the marshy rice lands. Even the crops are mainly gathered from trees.

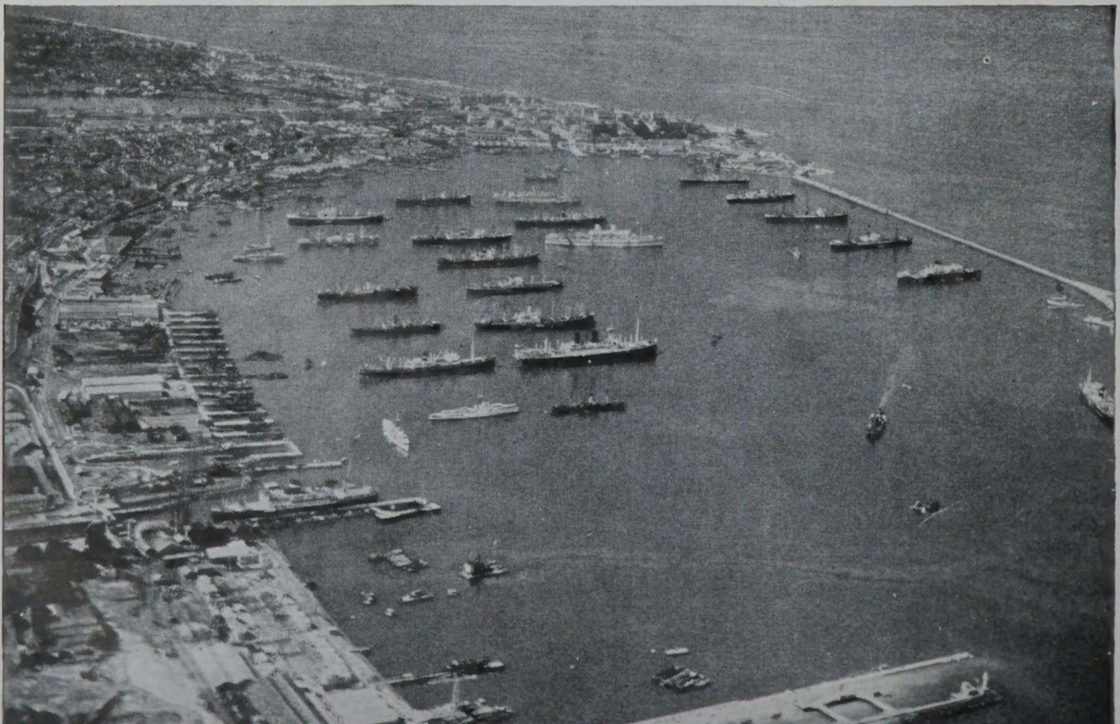


THE ISLAND OF CEYLON

CEYLON was the first of the great eastern islands to be reached by explorers from the west. Arabs, Portuguese, Dutch, British, all in turn ruled the island, or parts of it, for a time. Each left some mark which even today tells of their occupation. None of these peoples settled in Ceylon in large numbers, for to all of them their chief interest in Ceylon was as a stopping-place on the way to more eastern lands.

Ceylon is almost joined to India by a chain of small islands and coral reefs. These make the channel between the two countries unsafe for the passage of ships. Near the centre of the island is a high plateau crowned by several peaks some of which are over 6,000 feet high. This region is difficult to reach because it has a very steep edge on every side. Many rivers, usually short but all rapid, flow down to the lowland. Though their valleys are wide on the plateau they have cut deep gorges in its edge. All this high country was forested. A belt of lowland, widest to the

5. COLOMBO HARBOUR from the north-east. The long breakwater gives shelter from the strong south-westerly winds. On what routes is Colombo a port of call?

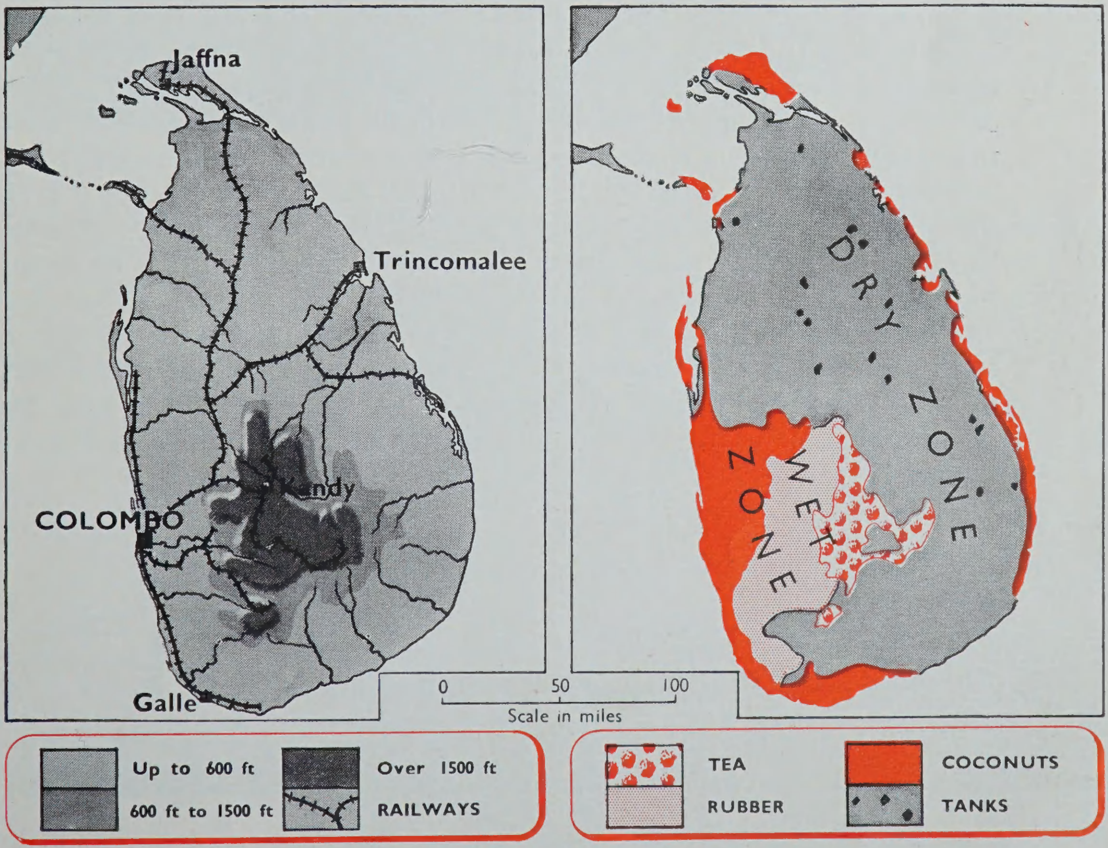


north, lies between the hills and the sea. It is mainly covered by jungle and scattered woodlands. Except on the east, the coasts are low and fringed by sandbanks which often enclose stretches of shallow water called lagoons.

In the hot summer, south-westerly winds bring heavy and frequent rainstorms to all the south-west side of the island and to the central highlands. In the cooler months, winds are most frequently from the north-east and the rain they bring is more evenly spread over the island and much less in amount. The island thus has one side with abundant rain, the *wet zone*. On the north and east side there is far less rain. Much of that part of the island has porous rocks at the surface into which the rain quickly sinks. So it is well named the *dry zone*.

Little cultivation is possible in the dry zone without the help of irrigation and few crops are now grown there. All over the zone, however, there are many tanks or reservoirs made to store water

6. CEYLON AND ITS CROPS. Note carefully where each crop is grown and try to explain its presence there. Which is grown on the hills and which on the lowlands? What important food crop is not shown? Why do nearly all Ceylon's exports go through Colombo?

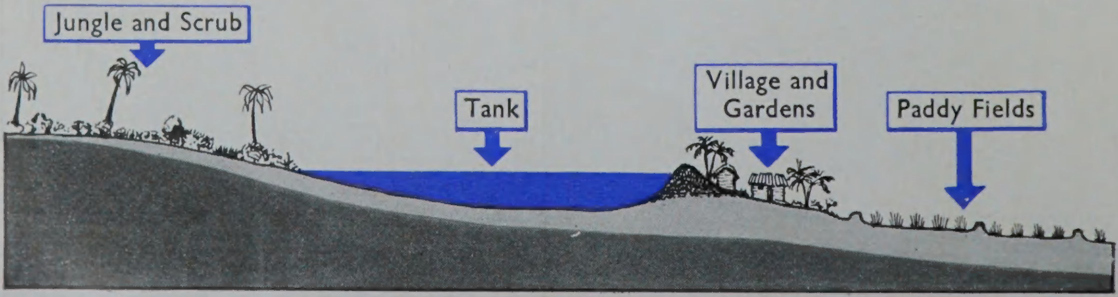


for irrigation. Many of these are over 2,000 years old, perhaps the very first examples of the storage of water for crop growing. Unfortunately, they were neglected long ago, in times of war, and are now filled up. They once enabled the Sinhalese people of Ceylon to grow all the rice they needed, but today Ceylon has to import rice for her workers. Some of the tanks have been made usable again in recent years and villages in the lowland are built near these, where the people can water their paddy fields and vegetable gardens.

The Arabs, the Portuguese and the Dutch traders were mainly interested in the spices the people grew in the wet zone, especially cinnamon and pepper. But the trade in spices was already dying when Ceylon became a British colony. So English planters were encouraged to buy land and plant coffee. Some of the Sinhalese worked on the new plantations and others grew coffee in their own gardens as it was easily prepared for market. But again Ceylon was unfortunate and suffered for relying too much on one crop. Disease struck the coffee plantations and soon destroyed nearly every bush in the island.

Some of the profits of the coffee trade had been spent in making a Botanic Garden. Its staff had been trying all sorts of tropical crops and believed that tea would flourish in the hills better than coffee. But it called for some changes. The cultivation and pruning of the tea shrubs need a lot of attention, and many more workers are needed to pick continually the youngest tea-leaves than are needed to harvest ripe coffee berries. The drying and "curing" of tea, too, and its packing and blending, must be done in factories managed by skilled people.

The Sinhalese farmer could not grow tea mixed with his other crops, nor could he afford to build a factory to deal with his small crop. Thus it came about that tea cultivation was carried on by London firms with money enough to make big plantations and



7. The picker gathers with nimble fingers the end shoots and smaller leaves from each twig.

ON A CEYLON TEA PLANTATION.

8. The plantations have been made on the lightly wooded plateau country. The bushes are kept low by careful pruning.

build factories and pay their skilled managers. Workers by the thousand were brought over from southern India. Their homes and food were provided by the companies, for they were whole time wage-earning workers and had neither time nor land to grow food for themselves. Ceylon has long ranked next after India as the largest tea exporting country.

Twice Ceylon has suffered because she depended on a single crop—first spices, then coffee. Would she suffer again by depending on tea? To insure against this the government has tried to introduce other crops. Thus some young plants grown at Kew from the seeds of rubber trees smuggled out of Brazil were sent to Ceylon for trial. They grew well and soon many plantations were laid out on the lower hills in the wet zone. Thus a second crop was added to tea about 50 years ago.

A third important crop in Ceylon today is the coconut palm. It has grown there for centuries; its fruit is used as food and drink, its leaves for thatch, and the coarse fibre that covers the shell is made into ropes. The white flesh of the nut, called copra, is dried in the sun and then shipped to Europe. The oil pressed out of it is used in the making of soap and cooking fats. What used to be a simple garden crop is now grown on large plantations. What the Sinhalese used to add to their rice to make it more tasty is now shipped to Europe in thousands of tons.

When Ceylon traded only in spices the little port of Galle could handle all her overseas trade. As the coffee trade developed, railways and a bigger port were needed. The great artificial harbour of Colombo was constructed. Today it is thronged with shipping—some are loading the island's own products and others are big liners calling on their way to or from the East Indies, the Far East or Australia.

Consult books in your library and then write the story of a packet of tea, from its growth in a Ceylon plantation right through to the tea-pot.

People of several races are found in Ceylon. How did this come about?

Show from Ceylon's story two dangers that arise when a country depends on a single crop.

A MEETING-PLACE OF PEOPLES

IN all equatorial lands the thick forest growth makes travel difficult. Paths and roads must be cut and are soon overgrown again unless continually cleared. In Africa and South America the main highways are the rivers, in the Asian islands the sea. In these eastern islands the people long ago learned to build ships and so were able to move freely from island to island. But the sea was also an open highway for seafarers from other countries and thus it came about that people of many lands have traded with and lived in the East Indies.

These lands lie midway between India and China. The Malay Peninsula stretches far south from the mainland towards Australia, presenting a barrier that must be rounded by ships on their way to China and Japan or Australia. The East Indies break the two thousand miles between Malaya and Australia into narrow straits so that all ships pass near the coasts of some of the islands.

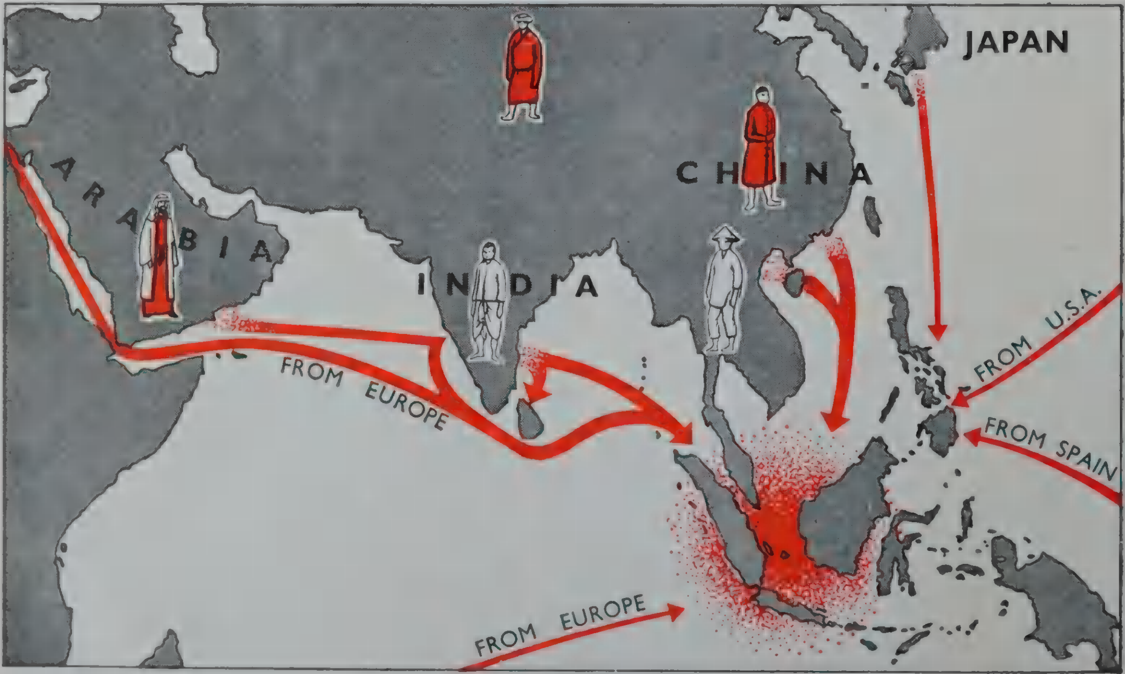
The sea has made these island lands a meeting-place of peoples. For hundreds of years the Malay and Indonesian villagers have contentedly lived their own lives, growing rice and fishing,

9. A SINGAPORE STREET SCENE.

while Indian traders and Arab sailors have come and gone. So, much of the folk-lore and literature and decoration of these lands is Indian in origin, while most of the people are Muslims in religion. For hundreds of years, too, Chinese traders and miners have come from the north, and stayed. Then, more recently, Europeans came too, not to settle but to refashion the countries better to serve Europe's growing industries. They introduced rubber from Brazil, the oil-palm from the Gulf of Guinea, coffee from Africa, tea from China and India, and brought machinery to the tin workings started by the Chinese. With the new developments came thousands of Indians to work on the new plantations and thousands of Chinese to work in the mines. The Europeans have organized the building of railways and roads and replaced the Arab dhow and Chinese junk by steamships, while the Chinese have developed the trade and shops to provide food for the new inhabitants.

There were probably only about 10 million people in all these lands 150 years ago: now there are over 150 millions. Then Malaya had a population of perhaps 250,000 people. Today in Malaya and Singapore there are over 6 million people of whom about 3 millions are Chinese and nearly $\frac{3}{4}$ million Indians.

10. WHERE MANY PEOPLES MEET.



TIN AND RUBBER FROM MALAYA

THE Arab and early European traders passed along the marshy shores of the Malay Peninsula as they followed the Straits of Malacca on their way to the Spice Islands. All the interior of the country was covered by dense forests with thick undergrowth. It was almost completely uninhabited, for the Malays could neither clear the forest nor drain the marshes. Most of them were content to live by growing rice and fishing in the rivers and coastal waters. How has it come about that today Malaya is a rich country?

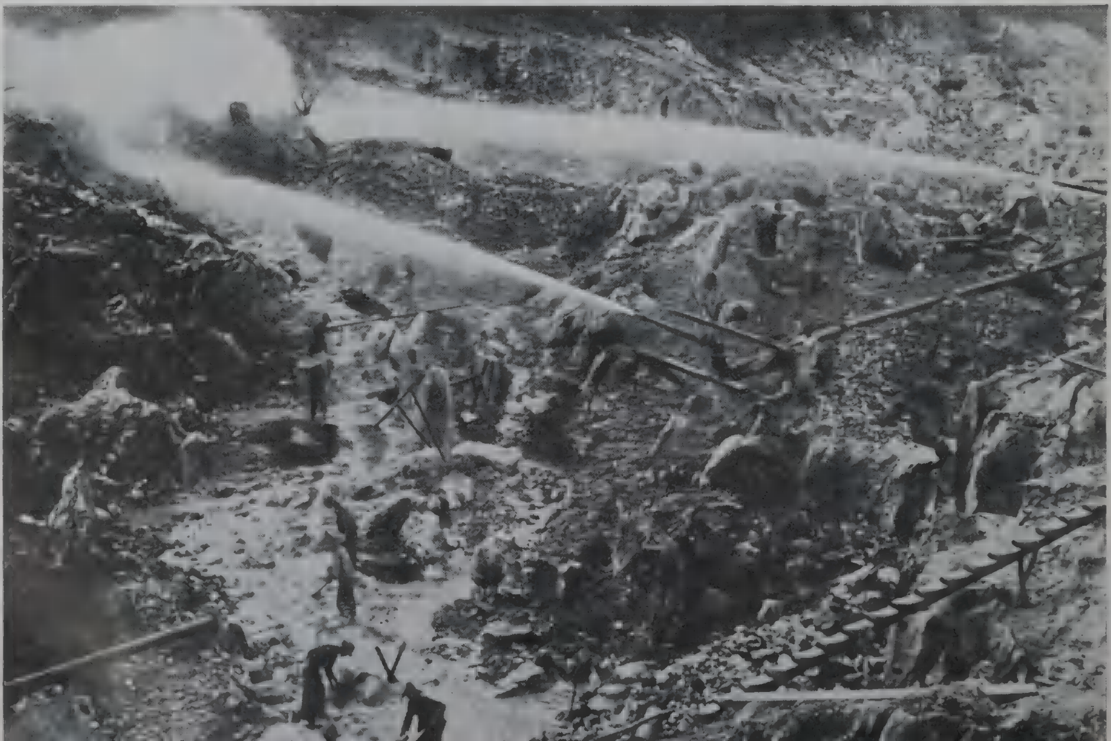
The Malays still live very much as they have always done. Their villages or *kampongs* consist of a cluster of huts roofed with leaves. The flimsy walls are woven from reeds or narrow leaf strips, and the floors are raised on piles a few feet above the wet

11. IN A TROPICAL JUNGLE.

ground. There are usually few shops in the village for there is little trading; each family provides its own food and clothing and makes most other things it needs. The wealth of modern Malaya has chiefly been created by workers who have come from other lands. The most valuable of its products are tin and rubber. Today Malaya produces more tin-ore than any other country in the world ; together with the large neighbouring island of Sumatra it is the chief source of the world's natural rubber supply. It was the mining of tin and the growing of rubber that brought about the development and the great increase in population. It is the money obtained by selling tin and rubber abroad that has paid for the railways and roads, schools and hospitals of the country.

Rich deposits of tin-ore were found in the west of the country a hundred years ago. The Malays were not interested, but Chinese workers were: they came at first in hundreds, then in thousands and tens of thousands, to work in the tin mines. Europeans became interested too about 50 years ago and brought new ways of mining. Tin-ore occurs in scattered grains and thin veins in the granite rock of the Malayan mountains. The heavy rain and hot sun decay the solid granite and change it into clay and sand. Streams wash this down from the hills and fill the

12. TIN MINING WITH "WATER CANNON"



valleys with gravel and sand and mud in which the heavy black grains of tin-ore are mixed. Tin mining consists in digging up the gravel and sand, washing away the lighter stuff in a stream of water, and collecting the heavy tin-ore that has sunk to the bottom.

In level or fairly level country most of the ore is now got by *dredging*. A tin dredge is an odd sort of ship. A pond or "paddock" is dug in the gravel and soon fills with water. The big dredge floats in this. A chain of buckets on a long arm reaches down below the water and scoops up water and gravel and tips them into a wooden channel that runs through the dredge. The water washes the mud and light pebbles out into the pool behind the "ship" while the heavy ore is caught by narrow bars on the floor of the channel. Thus the dredge eats its way forward and fills in the pool behind.

In hilly country a different method is used. Great jets of water are pumped through "water cannon" and wash the earth and pebbles and ore down into a deep pool. Strong pumps lift the mixture from the pool into a channel or sluice raised on a high framework so that the water rushes quickly away and carries with it to a waste dump everything except the ore.

The tin-ore is sent to Penang or Singapore where the tin metal is extracted by smelting and shipped mostly to the United States. Most of it is used to cover the thin steel sheets from which "tins" are made for packing foods and tobacco and many other things. Nearly all the workers on the mines and in the smelters are Chinese and many of the mines are owned by Chinese companies too.

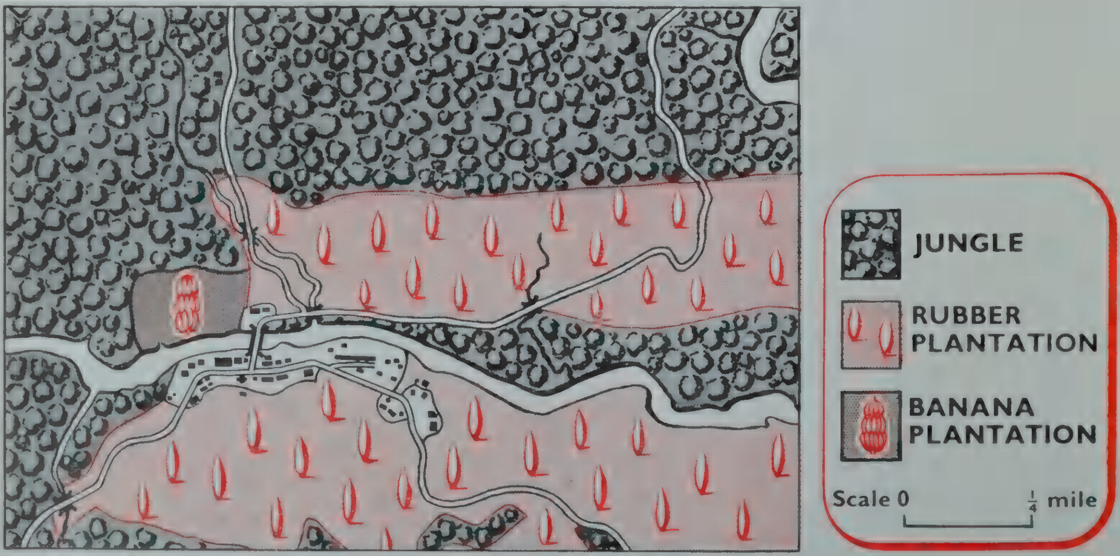
Rubber comes from a tree which was found growing wild in the forests around the Amazon river in South America. Twenty-two seeds of this tree were brought to Malaya for the first time about 80 years ago, but the great rubber boom started only 50 years ago. Until cycles and motor-cars were invented and manufactured in large numbers, the wheels of vehicles had always been solid—cart-wheels and coach-wheels of wood, railway wheels of iron. The new invention of air-filled tyres created a great demand for rubber. This encouraged the planting of large areas in Malaya and many companies were formed for the purpose. To clear and work the new plantations in the previously almost uninhabited interior, workers were brought over from India.

The rubber estates are in hilly, well-drained districts and each of the big estates covers much more land than even the biggest English farm. The first stage in making the plantation is to cut and burn all the forest and its undergrowth. Then the ground is ploughed, burying the ashes and making an even surface on which young rubber trees from a nursery are planted in regular rows. The spaces between the rows are sown with beans or a low-growing plant that will check the washing away of the soil by heavy rains.

The success of the big plantations and the profits that could-be made from growing rubber as the United States and Europe made more and more motor vehicles each year, have encouraged small plantations as well, many as small as a couple of acres. Today two-thirds of all the cultivated area of Malaya is planted with rubber trees. Once the trees have grown large enough to be "tapped"—four to seven years after planting—the work is very much the same on a small or a large plantation. In some ways it is rather like work on a dairy farm, though here the cows are trees.

Rubber comes from the sap or juice of the rubber tree. The worker slices away a thin piece of the bark of the tree with a very sharp curved chisel and hammers into the bottom end of the cut a small metal spout. The sap or *latex* runs down the cut and is

13. A MALAYAN VILLAGE. The village lands and plantations are all clearings in the jungle. Why is the village on the banks of the river?

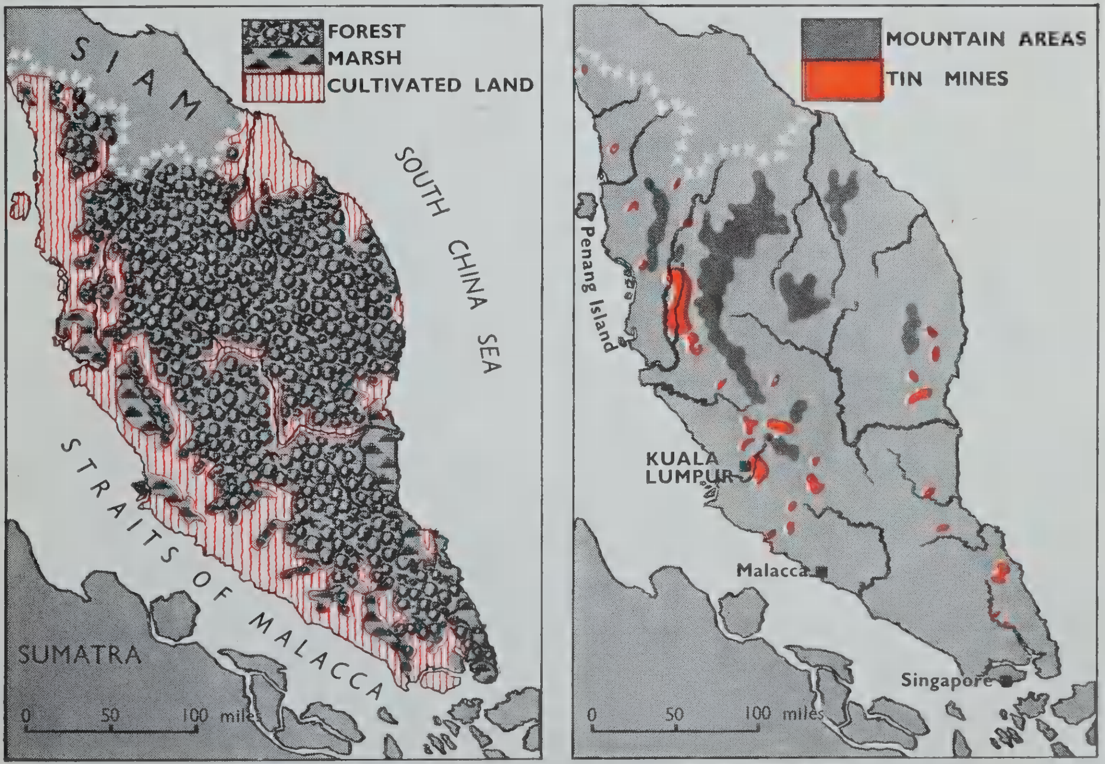


led by the spout into a small pot hanging below it. Every other day the tapper must come back to each tree and re-open the cut.

The tapper sets out early in the morning and taps some 300 trees. When he has finished he must go round again to collect the "milk". He must do this as soon as possible for the latex will be spoilt if it is left for a day without treatment. He empties each of the small cups into a bucket and brings back the liquid latex to the factory on a large plantation, or to some shed on a small one. Here he empties the latex into a tin tray or shallow tank, dilutes it with an equal amount of water, and then adds a spoonful of acid and stirs it all up. This causes the liquid to "curdle" into a solid sheet. He rolls the sheet through a mangle four or five times to squeeze out most of the water, and then hangs it up over wood fires to dry for several days before packing it off in bales to the port.

Tin and rubber between them have made Malaya a wealthy country, and Singapore into one of the world's great ports with

14. CULTIVATION AND MINING IN MALAYA. Two-thirds of Malaya is still jungle. Can you explain why *all* the lowlands are not cultivated? Rice and rubber are grown along the river valleys of the interior: can you explain why the tin-mining, too, is in the river valleys?

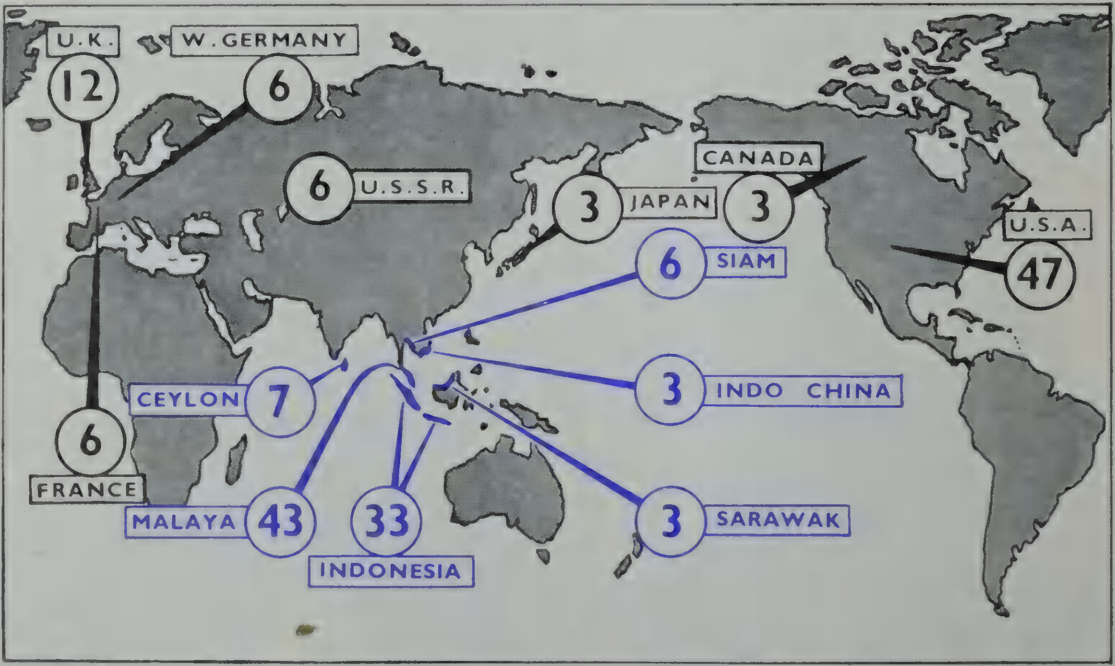


over a million inhabitants, of whom more than four-fifths are Chinese.

What are the main industries which use the tin and the rubber produced in Malaya? Why are these industries not carried on in Malaya? Why has the production of tin and of rubber increased so greatly in the last fifty years?

The people of Malaya are about half Malays and half Chinese, with a good many Indians. The Malays are mainly villagers growing rice, the Chinese are traders and tin miners, the Indians plantation workers. In what parts of Malaya would you expect to find most of each race? All use rice as their chief food and it grows well in the country. Why then has so much rice to be imported?

15. RUBBER GROWERS AND BUYERS. Red figures show percentages of natural rubber produced, black figures percentages of rubber used. Where does three-quarters of the world's supply of natural rubber come from? What country takes almost half the world's supply?



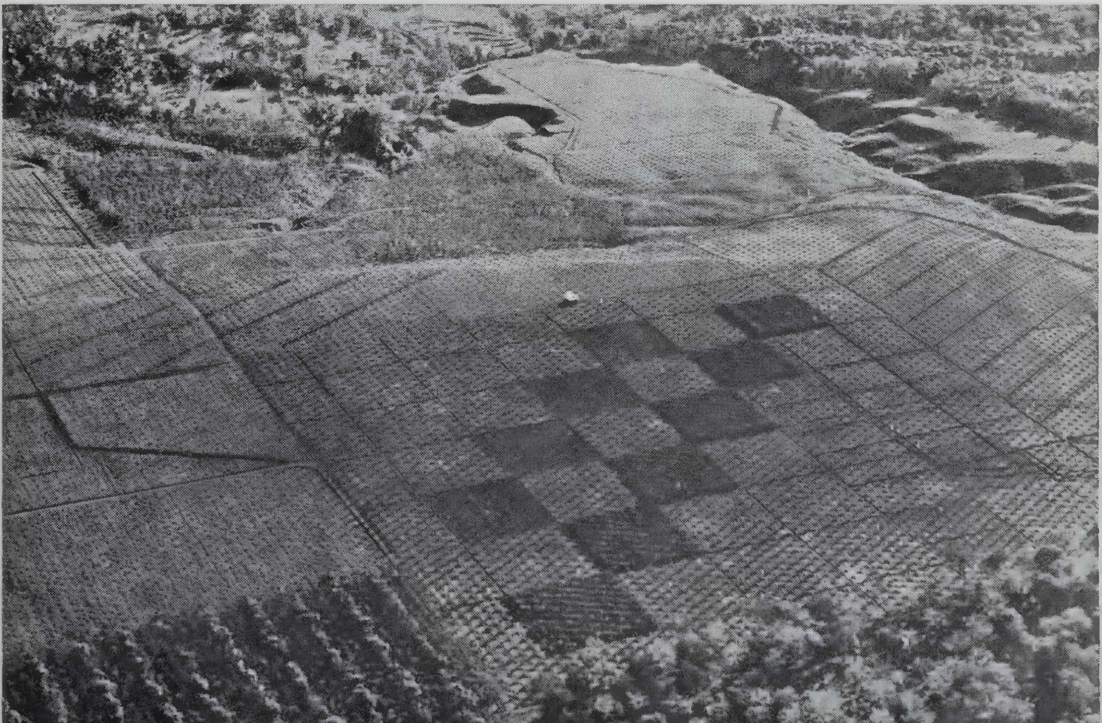
JAVA AND ITS VOLCANOES

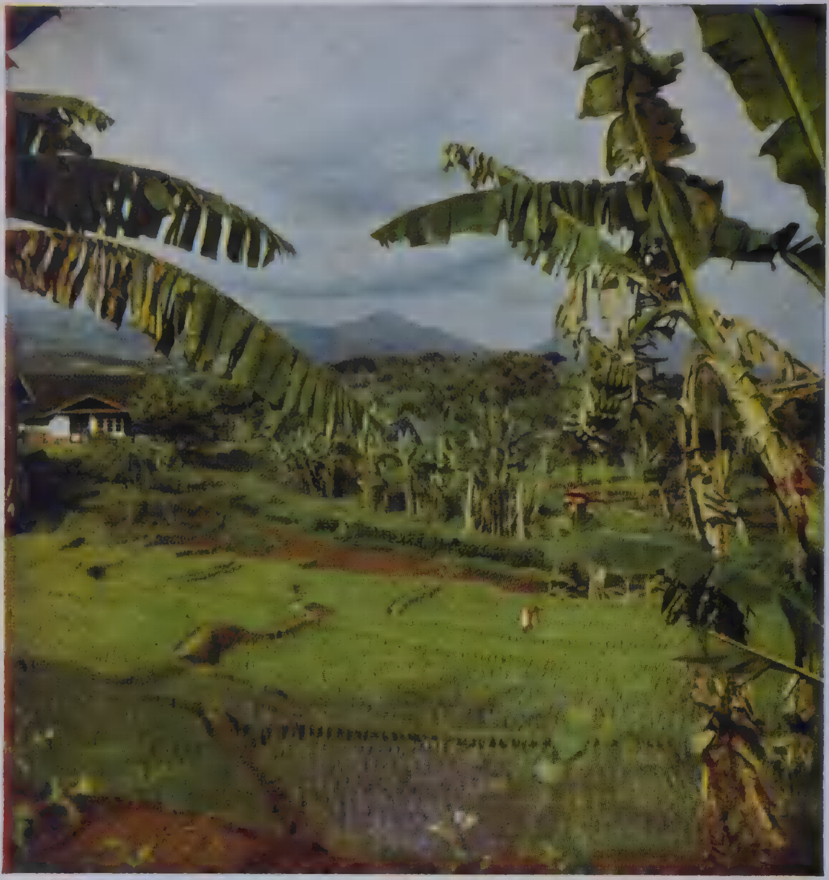
JAVA, 500 miles to the south of Malaya, is one of the most remarkable and densely populated islands in the world. Malaya and Java are just about the same in area, but Java has eight times as many people living on it. Java has indeed a much larger population than England, which is also just about the same in area, though on this Indonesian island there are only six towns, very little mining, and only a few industries. How is it that so many people can get their living from farming this island?

In Malaya two-thirds of the country is still natural jungle and forest. How is it that over two-thirds of Java is cultivated? In Malaya two-thirds of the cultivated area is planted with rubber trees: how is it that there is such a variety of crops in Java that the island has been called "the garden of the Indies"?

One reason is that the soil of Java is exceptionally fertile. Strange as it may seem at first, this fertility is largely due to the fact that there are 121 volcanoes in the island!

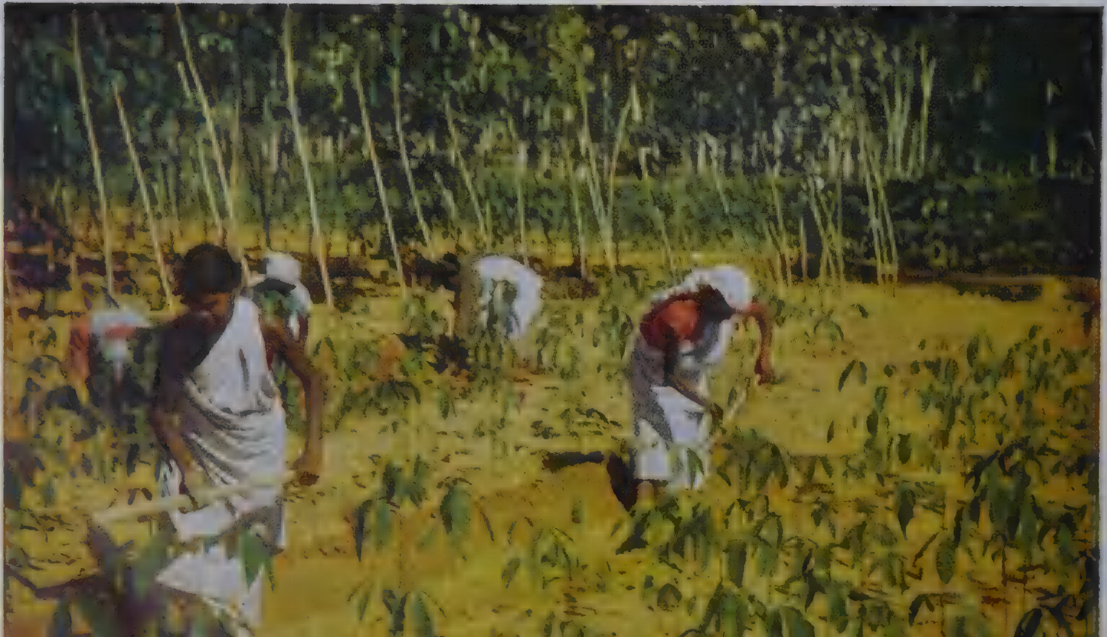
16. MIXED PLANTATIONS IN JAVA. These are on the ash-covered lower slopes of one of the dead volcanoes. Notice the deep gullies cut by the streams.





17. IN JAVA. Note the bananas, the paddy fields (where the rice is grown), the distant volcano.

18. IN MALAYA. Indians are working among the seedling rubber trees.



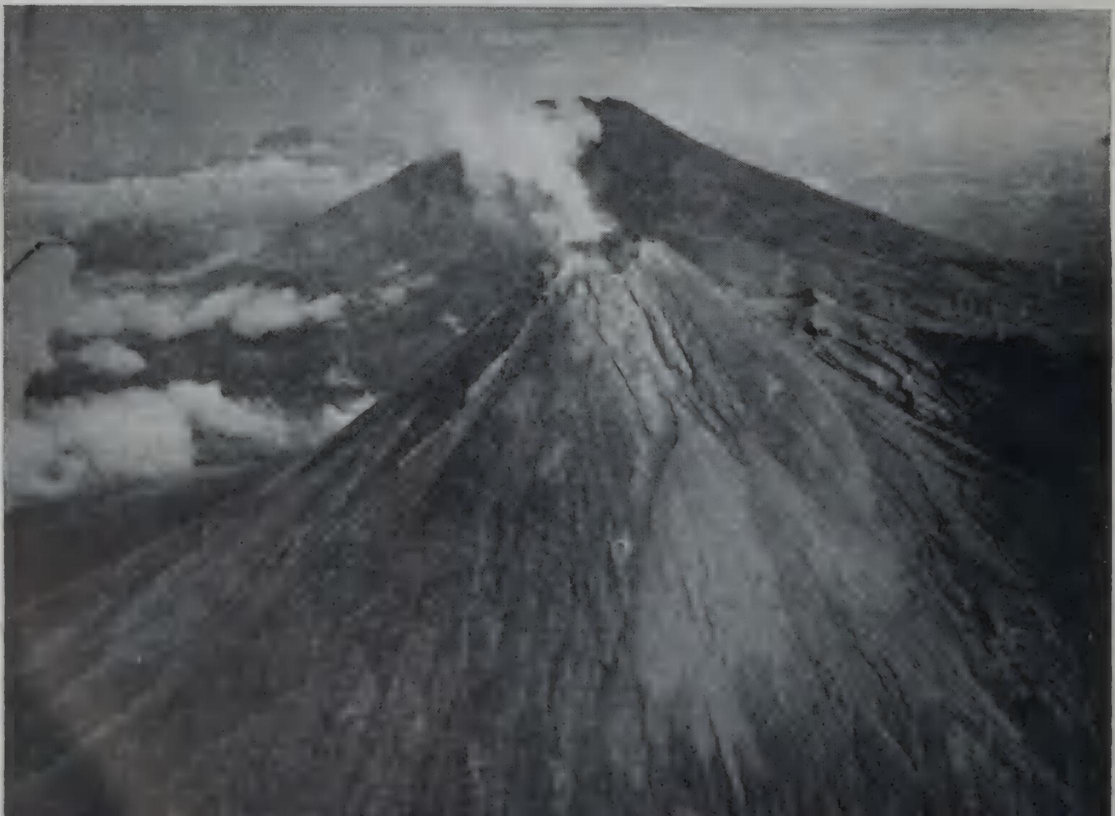
19. MARKET DAY IN AN INDONESIAN VILLAGE.

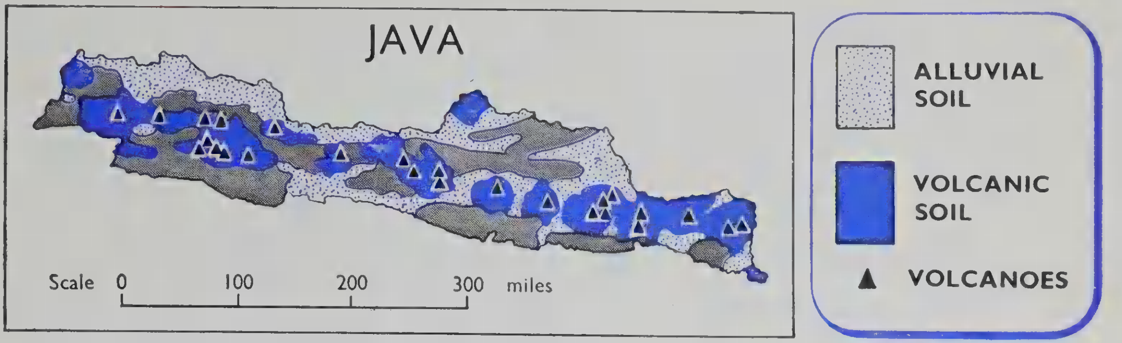
20. BEACH SCENE ON A PACIFIC ISLAND. The trees are coconut palms.

Most of the northern part of Java consists of a wide, flat plain not much above sea-level. Across this plain there wind many slow streams which rise in the mountains to the south. For the southern two-thirds of Java is hilly and mountainous throughout the whole 600 miles of its length. Here are the volcanoes. About 60 of them have conical peaks over 6,000 feet high. In whatever direction you look, you can see one or more of these volcanic cones. Most of them are dead, but some still throw up clouds of steam and smoke and from time to time burst into activity.

When a volcano is active it pours out molten rock and clouds of fine ash from deep within the earth. The lava flows down the side of the cone from the crater or outlet in the summit. It destroys every living thing, animal or plant, that lies in its track. It may start forest fires or burn up whole villages and all their crops. The hot ash is thrown high into the air by explosions and may be carried by the wind for long distances. It too can set fire to crops and to the flimsy houses of bamboo and palm leaves

21. CONE AND CRATER OF A VOLCANO IN JAVA. The cone has been built up mainly by the ash and cindery material thrown out. Heavy rains wash the finer ash down the steep slopes. The streams spread it across the lowlands.





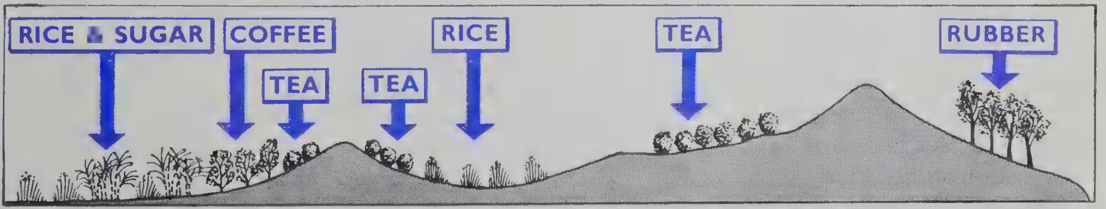
in which the people live, or bury them in hot dust. One would expect the people to keep far away from such dangerous places. Instead, they make their homes and grow their crops right up the slopes of the volcanoes. Why do they do this?

Simply because the ash and the lava from Java's volcanoes soon turn into the most fertile soil. They are quickly cooled by the rains, the lava is broken up and the ash is washed down the slopes and out over the low country. Every stream becomes a muddy torrent carrying the fertile ash over the lowlands. That is just how the low plains along the north side of the islands have been, and still are being, built out into the sea.

On these fertile soils the people of Java can grow a great variety of crops in all seasons of the year. In fact there are really no "seasons" in Java, no winter as in Britain, no dry season as in India and China.

Since all Java lies within 10° of the equator, there is no cold, or even cool, season. The difference in temperature between day and night is greater than the difference between day temperatures in January and July. Like other equatorial countries too, there is an abundance of rain. Most of the island has three times as much rain in a year as London, with thunderstorms and torrential

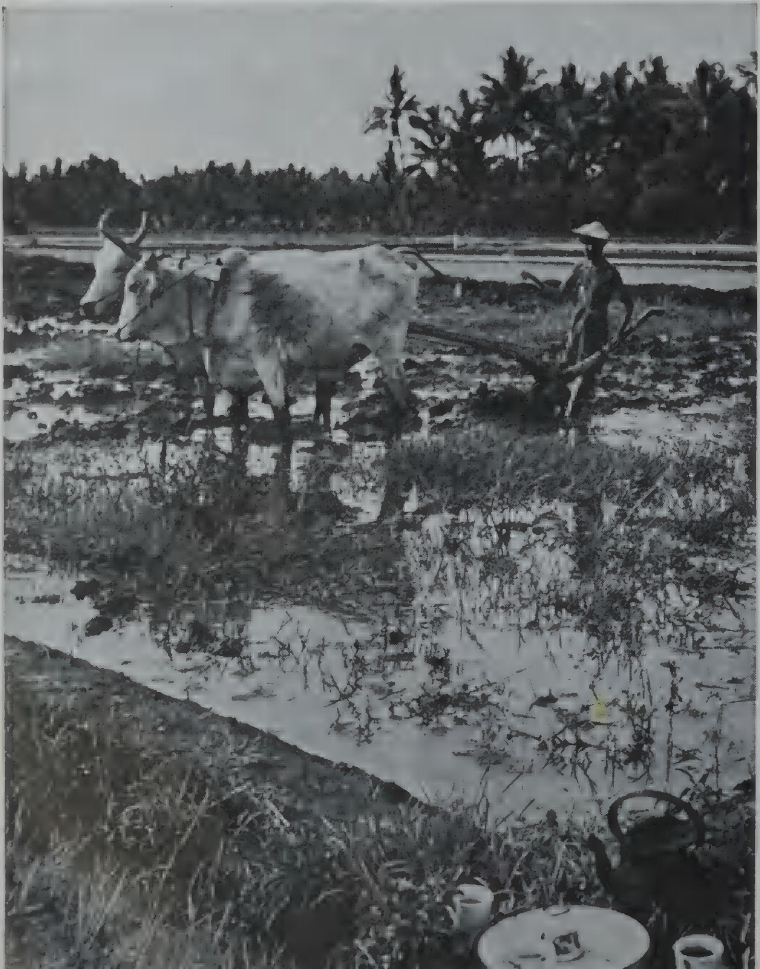
22. HOW CROPS CHANGE FROM NORTH TO SOUTH IN JAVA. Compare this diagram with the one on page 5.



downpours daily: in the mountains a year's rainfall may amount to over 250 inches! Though Java has a monsoon climate, there is scarcely any month that can be called really dry. In the eastern part of the island, however, there are often quite long droughts that last for a few weeks on end, long enough to ruin a crop like rice that needs plenty of water throughout its growing season: so irrigation is important there.

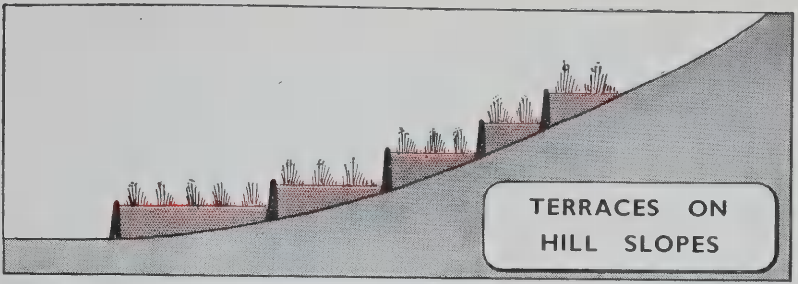
With hot days and plenty of rain all through the year, the people of Java can make the most of the fertility of the soil, often getting two harvests in the year from the same plot of ground. Somewhere, in every week of the year, a field is being sown and another harvested in this island that has no seasons.

Nearly all the forests that used to cover the island have been replaced by fields. On the lowlands there was no difficulty in making fields. But how could the people of Java turn into



23. A PADDY FIELD ON THE COASTAL LOWLANDS. Ploughing is just beginning in the flooded field. In the foreground you can see a corner of another field where the rice is already well grown.

24. On page 32 you will find a colour photograph of rice terraces like these.



fields the steep slopes of the volcanic cones, covered in ash? If they left them as they were, they would be too steep for their oxen or buffaloes to plough; the rain would run rapidly down the slopes, leaving the crops without water between the showers; worst of all, the heavy rain would quickly wash the fine soil away to the valleys.

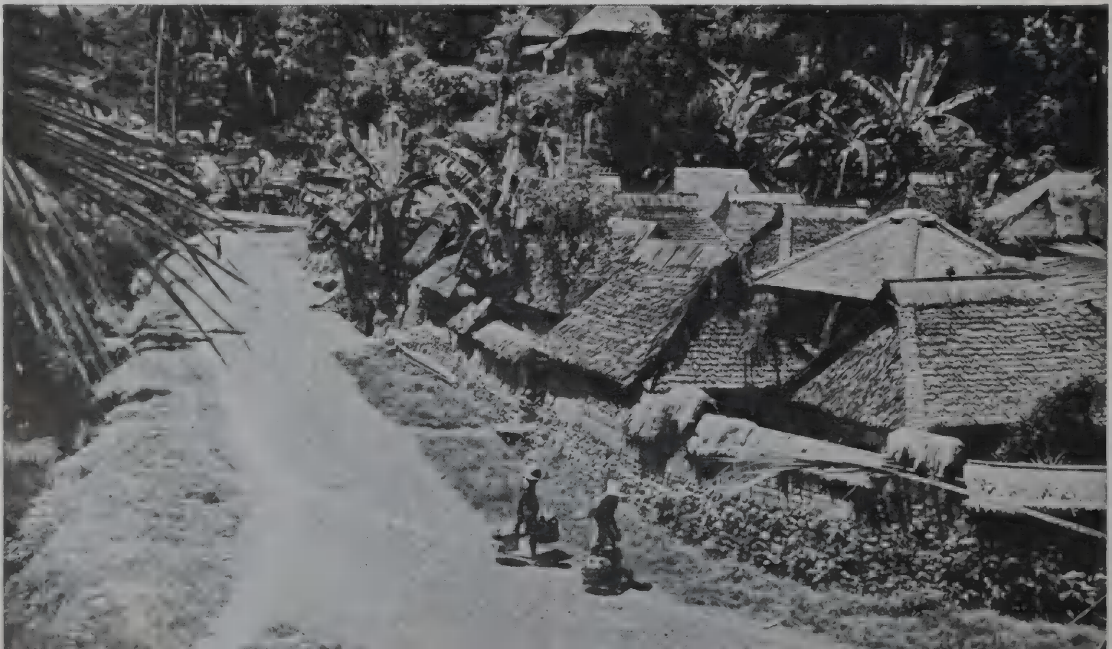
To overcome all these difficulties the people of Java have built terraces across the slopes. First they make a wall of blocks of old lava and pack fine soil tightly against it. Then they fill with soil the remaining space until it is nearly level with the top of the wall. The rain now sinks into the soil and soaks gently down through the terraces instead of rushing wildly down and carrying the soil with it. Bamboo pipes tap the springs on the mountain-side and lead the water from terrace to terrace. Bananas and bushes planted close to the walls help to strengthen them and to check the flow of water.

Most of the land must be used to grow food to feed the dense population. Rice is the most important crop and the chief food in Java, as it is in all south and east Asia. Maize is also grown, especially in the eastern parts of the island where there are longer periods of the hot dry weather needed to ripen the grain. There are many root crops too. The yam is a climbing plant with roots like very big potatoes, and cassava has also a big root from which tapioca is made. There are groundnuts, too, and soya beans, and in odd corners of the fields and on plots near the houses, bananas and many sorts of vegetables and fruit are grown to give variety to the regular dishes of rice and tapioca. On the main crops all the villagers work together to plant and harvest the crop, which is then stored in a communal village warehouse. They work together, too, in building the terraces and clearing mud and weeds from the irrigation ditches. The villagers are allowed a proportion of the crops from the store for their own needs. Any surplus is sold to the town dealers by the village council.

There is little land to spare in Java for big plantations, but a number of crops are grown in small plantations or in rotation with the food crops in the fields. Sugar cane is the most important of these cash crops and is grown on nearly all the lowland rice farms. Tobacco is a cash crop grown chiefly in the east of the island, often high up on the slopes of the volcanoes, while the highest yields and best qualities of tea come from the wetter western hill-slopes at a height of 4,000 to 6,000 feet above sea-level. Coffee, too, is grown on the hills, while lower down the slopes, chiefly about 1,500 feet above sea-level, there are many small rubber plantations. Here and there there are a few plantations of cocoa trees, and many cinchona trees from which quinine is made, while on the coastal plains there flourish groves of coconut trees. So you can see what a variety of crops are produced on the fertile soils of this island where plants can flourish all the year round. You can see too that nearly all of these crops are foreign to the island. They were introduced from abroad to be sold abroad and they still form part of the island's exports.

Unlike Malaya, Java does not have a huge export trade. There

25. AN INDONESIAN VILLAGE. Note the type of thatched roof, the bananas growing amongst the houses, the crops drying on the yard walls, and the poles used for carrying.



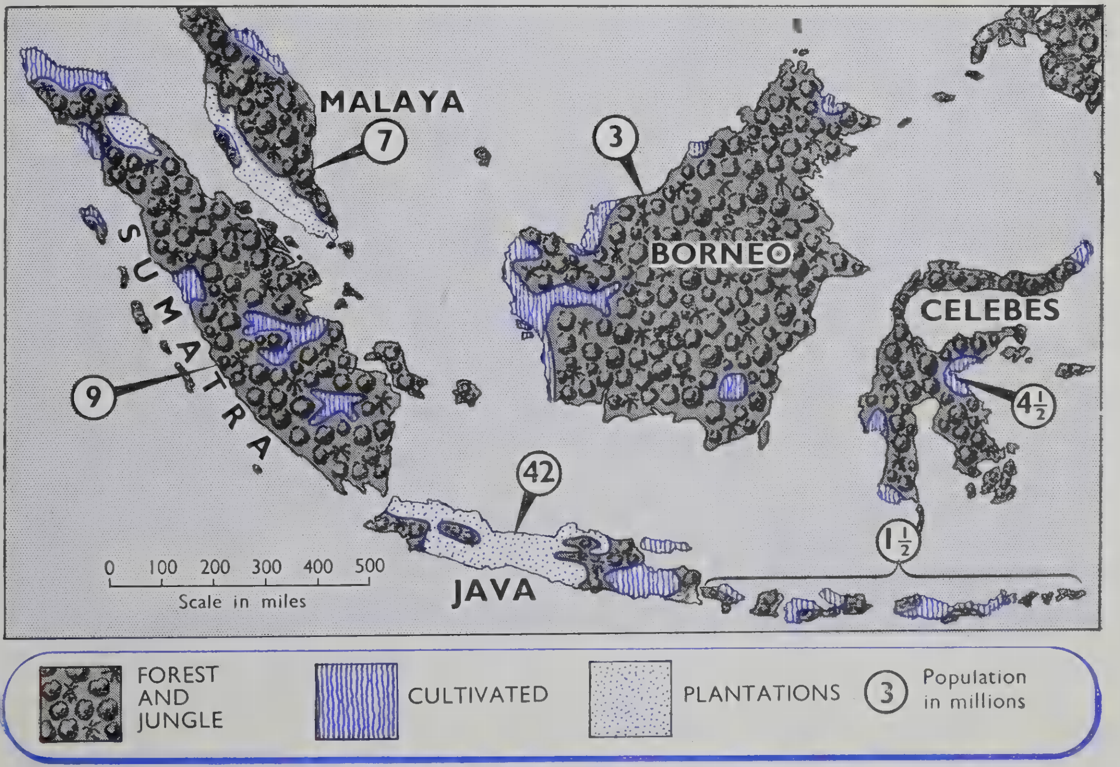
are too many Javanese to be able to spare room for growing much for other peoples. But the chief port, Djakarta, is larger than Singapore and is one of the largest towns in south-east Asia.

The volcanoes of Java may frighten the people but they also help to feed them. How do they do this?

Notice the many baskets shown in the market scene in Fig. 19. They are used for carrying and storing food and other goods, for protecting young plants, and as fish traps. What reasons can you give for their frequent use?

Many of the crops grown in the East Indies are not native to the country. Name some of these, say from whence they were brought and give all the reasons you can for their successful introduction.

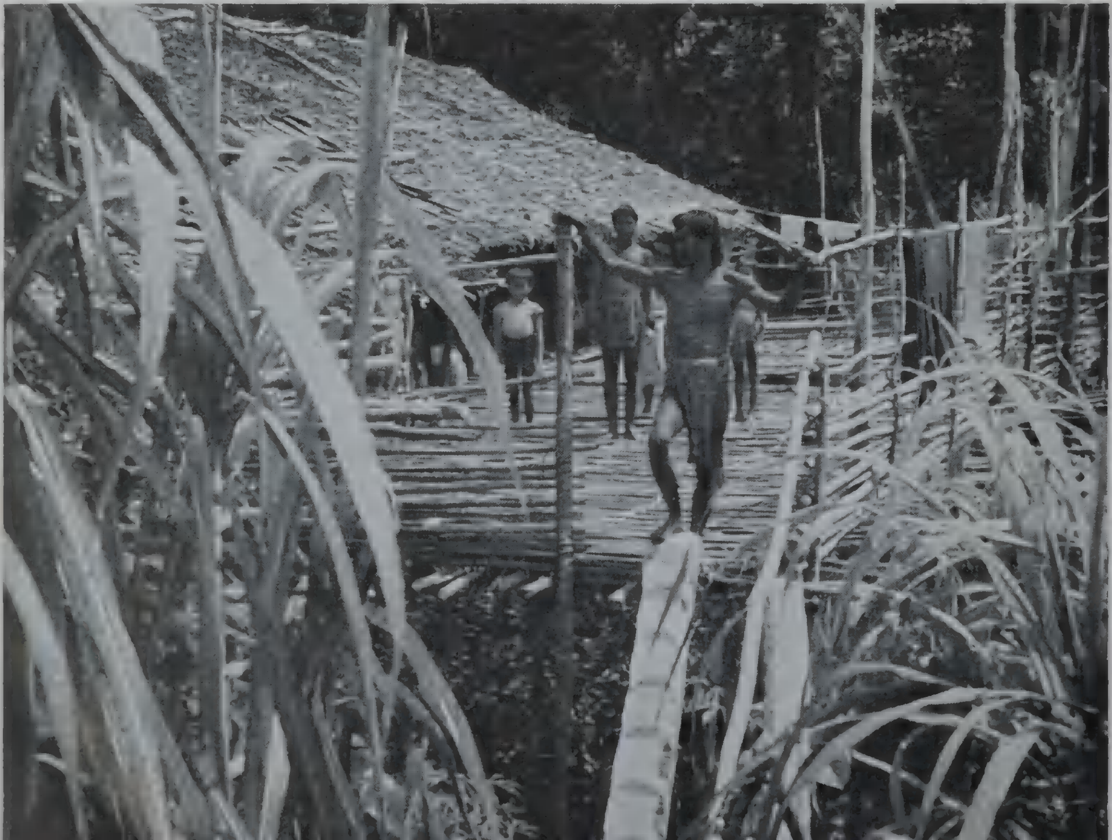
26. FOREST AND POPULATION. Why has Java much the largest population? Many people have recently emigrated from Java to Sumatra. What must be some of their first tasks?



THE DYAKS OF BORNEO

THERE are four great islands in Indonesia. Java is the smallest of these but has three times as many people as the other three islands put together. Borneo is the largest of these islands and has much the smallest population. Most of the land in Borneo is still covered with mountain forest or marshy jungle in which few people live. Only small areas near the coast or along the rivers are farmed. The coasts of the island provide few good harbours for ships; wide marshes and shallow channels at the river mouths and dangerous coral reefs elsewhere keep the seamen away from the land. So Borneo has attracted far fewer people from other lands then either Malaya or Java. The island had not got the fertility given by Java's volcanoes or the accessibility needed by the European seeking to establish plantations for tropical crops.

27. A DYAK HOUSE IN THE BORNEO FOREST. This is shorter than most of their houses. The entrance ladder is a notched tree trunk.



There are still a few primitive folk in Borneo who have no settled homes but roam the forests searching for their food. An overhanging rock, or a few big leaves spread over branches, will provide shelter for the night and keep out the heaviest rains. Some of the people make temporary homes on rough platforms high in the branches of a tree, out of reach of prowling animals. With blowpipe and poisoned dart they shoot down birds and some of the smaller wild beasts. A girdle of leaves serves them for clothing. Wild fruits and the soft inner stem of the sago palm provide most of their food. Some who live by the sea catch fish with nets or traps.

Many of the forest people have progressed a little further, especially where the year is broken by a dry season. At such times they cut down the undergrowth, tear branches from the trees and burn them. The ashes are scattered over the roughly cleared ground and scratched into the surface with pointed sticks. Some grains of rice, bits of yam or a few young banana shoots are planted and left to grow. When these crops are ripening the people make rough huts near the clearing and live on the produce

28. SEA DYAKS PREPARING BUNDLES OF RATTAN CANES FOR SALE.

as long as it lasts. Hunting and collecting in the forest has to serve their needs for the rest of the year.

The most advanced people are the cultivators of rice, who live along the rivers or near the sea. Let us pay a visit to a Dyak village in Borneo.

We must make our visit by canoe, for there are no roads and few paths in Dyak country. The journey must begin in the early morning so that we can reach the village before the hottest hours and certainly before the heavy afternoon rain. The village stands on the high bank of the river and usually consists of only one bamboo house on piles. But that one house may contain as many as thirty families! A notched tree trunk serves as a ladder to reach it from the ground. The house is divided lengthwise into three sections—an open verandah facing the river, then a long corridor used as a common room, and then a row of rooms, one for each family. The roof is thatched with palm leaves, the walls woven from reeds, the floor laid with split bamboo. All its building materials are obtained from the forest.

Mats or rugs, woven and dyed by the women, are laid on the floor for sleeping and are practically the only "furniture". The women weave and dye cloths and mats. Their own dress is usually a gaily-coloured and patterned short skirt worn with a

29. TRAVELLING BY CANOE ON A BORNEO RIVER. The canoe is being man-handled up a rapid. After heavy rain many rivers are impassable.

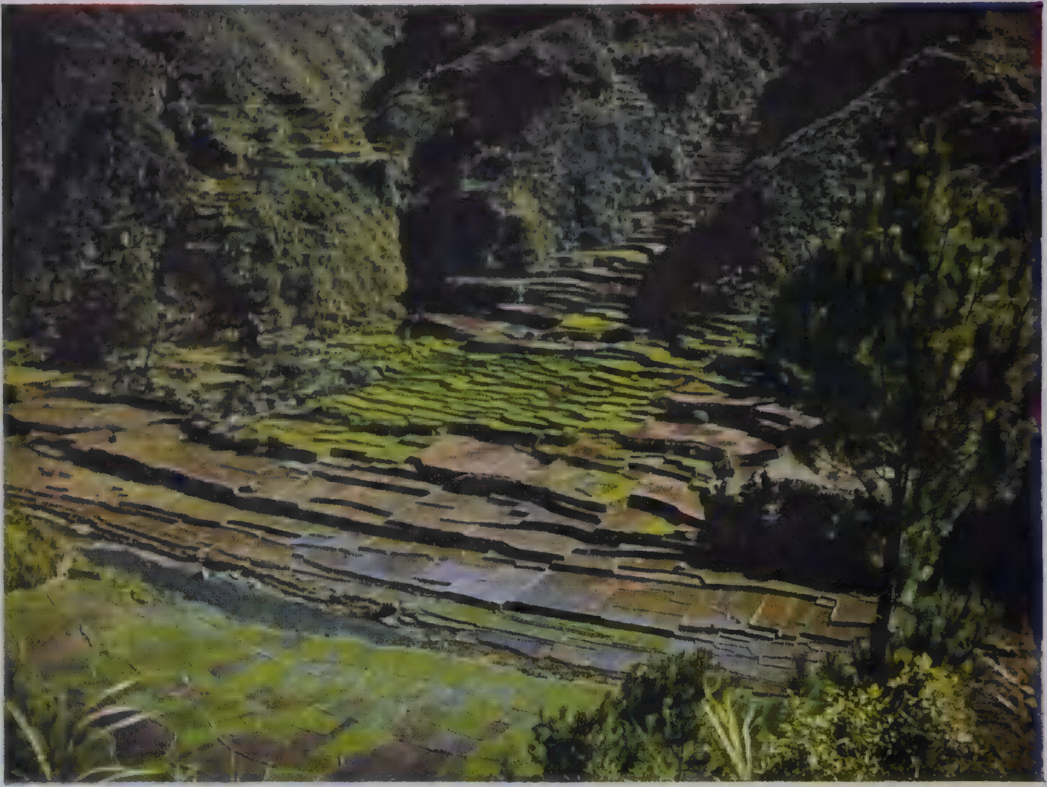
belt decorated with silverwork. The men wear only a cotton loincloth.

Meals are cooked on the verandah or under it. Rice, with peppers and spices for sauce, wild fruit and leaves, bananas, fish, eggs, chicken and sometimes pork, are the chief foods. The pigs and poultry eat up all the household waste and find their other food in the forest nearby.

Each village grows most of its own food. A patch of low ground near the river is cleared, by cutting down and burning bushes and trees, and is then planted with rice. Another patch near the house is often planted with rubber trees. The crude rubber, nuts from the forest trees, perhaps a few peppers and occasionally a few yams or perhaps a little rice, are all they have to sell. The soil is quickly worn out by the crops grown on it. A new plot is then cleared and the old one abandoned. After a few years, when all the land near the house has been used, the whole group will move to another spot, build a new house and start afresh.

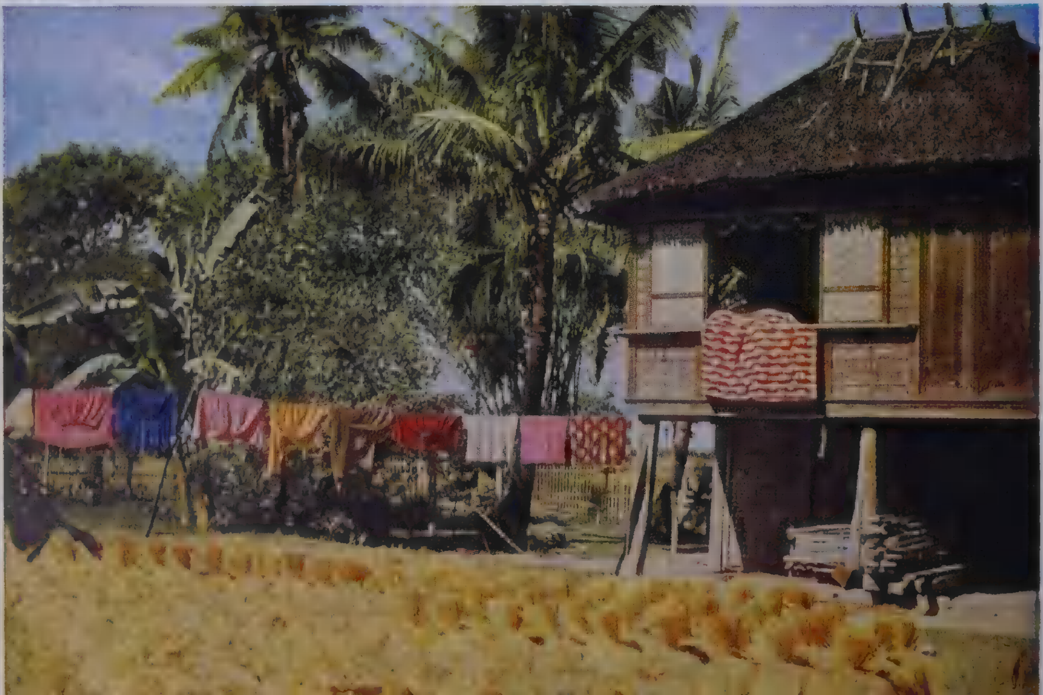
The pictures in the preceding pages show bamboo and other canes being used for many purposes. Make a list of these uses and add any others of which you know.

30. A PEPPER GARDEN IN BORNEO. The growing of spices is still important in some places in the East Indies.



31. TERRACED FIELDS IN THE PHILIPPINES. Why were the terraces made?

32. RICE DRYING OUTSIDE A PHILIPPINE HOUSE. Why is the house raised on stilts?



THE PHILIPPINE ISLANDS

TO the north-east of Borneo lie the Philippine islands. More than 7,000 islands are marked on modern charts but only eleven are of any importance. Luzon, far the most important, is about four-fifths the size of England, Mindanao is a little smaller, and each of the other nine is only about the size of an English county. They were discovered by Magellan and held by the Spaniards for over 300 years.

A special feature of the climate of the Philippines is the frequent occurrence of typhoons, great windstorms which sweep across the northern and central islands from east to west, doing great damage to buildings, crops and ships. With the wind comes torrential rain—46 inches has been recorded in 24 hours!

About half the area of the islands is still forest-covered. The mountain forests of Mindanao are still almost untouched, and only a few primitive hunters live in them. Nearly all the inhabitants are crop farmers whose only animals are the oxen and buffaloes used in ploughing.

Luzon has most cultivated land; more than half of it is used for food production. In the mountainous northern districts of this island the people have grown rice on terraces for over a thousand years. Each terrace, sometimes only a few yards wide, is held up by a wall of boulders which may be 30 feet high. Both boulders

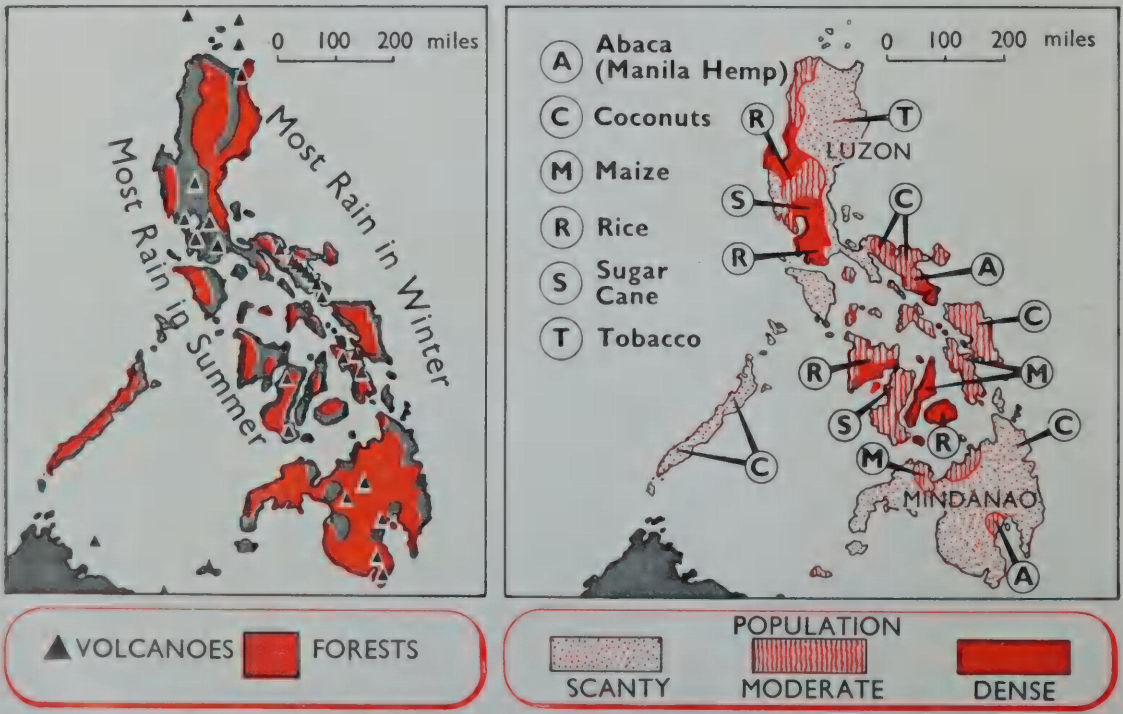
33. SPLITTING COCONUTS. The fruit is split with a heavy knife. The shell and its contents are lifted out of the fibrous covering. Then the white flesh is scooped from the shell. When dried the flesh is known as copra.

and soil have frequently been carried up from the valley. Hill streams are dammed and their water led to the plots through bamboo pipes or open wooden troughs.

In some ways farming in the Philippines is very different from farming in the East Indies. Rice is still the main food but its place has been taken by maize in some of the islands. The early Spanish colonists brought the latter from Mexico. Another difference is that the foodcrops are grown chiefly for sale. Even rice is grown on large estates and sold in the markets.

Sugar is the most valuable product grown for export. The cane is raised for the millowners, who crush the cane in their sugar mills and share the proceeds with the growers. But more land is used and more people employed in the growing of coconuts. Nearly every farmer has some coconut palms and there are also some big plantations. The trees are tall palms with a cluster of long leaves hanging from their crowns. Often the tops of the palms hang over the beaches so that the ripe coconuts fall into the sea. So all along the coasts of all these eastern islands, from

34. FORESTS, CROPS AND POPULATION. Why has Luzon a denser population than Mindanao? Which crops are better suited to the rainier and which to the drier areas? Which crops grow better on the volcanic soils and which on the non-volcanic soils?



Ceylon to Hawaii, you will see coconut palms gracefully waving, for the sea has carried the nuts from island to island.

In many of the islands now, and especially in the Philippines, coconuts have been planted in large plantations often stretching some distance inland from the sea. The nuts used to be grown for food and for their "milk", which was made into a kind of wine. Today the dried flesh, or *copra*, and the oil obtained from it are valued most. Much of the copra is simply dried before being exported for soap making. Local mills also extract the oil from it and export this. The Philippines produce more copra and more coconut oil than any other country.

Another valuable export crop is abaca or Manila hemp. This is used in the making of strong ropes, especially towing ropes for ships, for it rots much less easily in sea water than any other fibre. The fibre is obtained from a plant of the banana family which is a native of the islands. The fibre forms a hairy covering on the sheaths and stems of the leaves. Abaca is planted on the slopes of the hills in districts which have no dry season, e.g., in Mindanao. As it requires a rich soil it is found mainly in the volcanic areas. Even there it must not be grown on the same land for more than a few years without a change of crop.

Manila, the chief city of the Philippines, stands on a fine bay on the west side of Luzon and in a good farming district. It is the port from which most products are exported and has grown until it now has more than a million inhabitants.

What products of Indonesia, Malaya or the Philippines might you find at home in

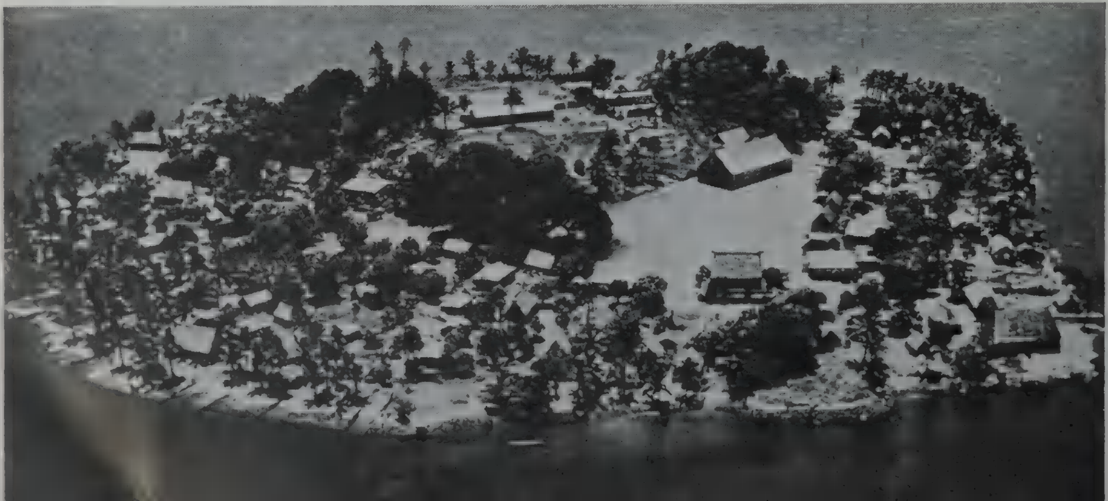
(a) the entrance hall,
(b) the pantry or store cupboard,
(c) the bathroom,
(d) the cycle shed or garage?

(Include goods manufactured elsewhere from raw materials exported from these countries. You will find Fig. 36 helpful for part of your answer.)

IN the Pacific Ocean there are thousands of islands. Most of them are quite small, many so tiny that they have no inhabitants. Wide stretches of ocean separate them from each other and from the great continents. Only birds and bats could reach them. Their vegetation all sprang from fruits which could float in the sea for long periods and still germinate on sandy shores, such as the coconut, or from tiny dustlike seeds, such as those of ferns, which the wind could carry for many miles. All the islands have mild climates and plenty of rain so that plants grow freely.

There are two very different kinds of islands. One group is made entirely of coral. These often rise only a few feet out of the sea. Their soils are so poor and shallow that they have little vegetation and the growing of food crops is almost impossible. The other kind is hilly. These are the summits of volcanoes rising from the ocean bed. Their soils are often rich and deep. All were originally forest-covered. The fruits of the trees provided food for the people and their leaves and stems were useful raw materials. The coral reefs around the island shores teem with fish of many kinds and this makes up for the absence of land animals.

35. A SOUTH SEA ISLAND. This is one of the smaller Fiji islands, about a quarter of a mile long and only rising a few feet from the sea. Along the shores there are coconut palms, like those in the colour photograph in Fig. 20. On this low coral island there live over two hundred people. How do they make a living?

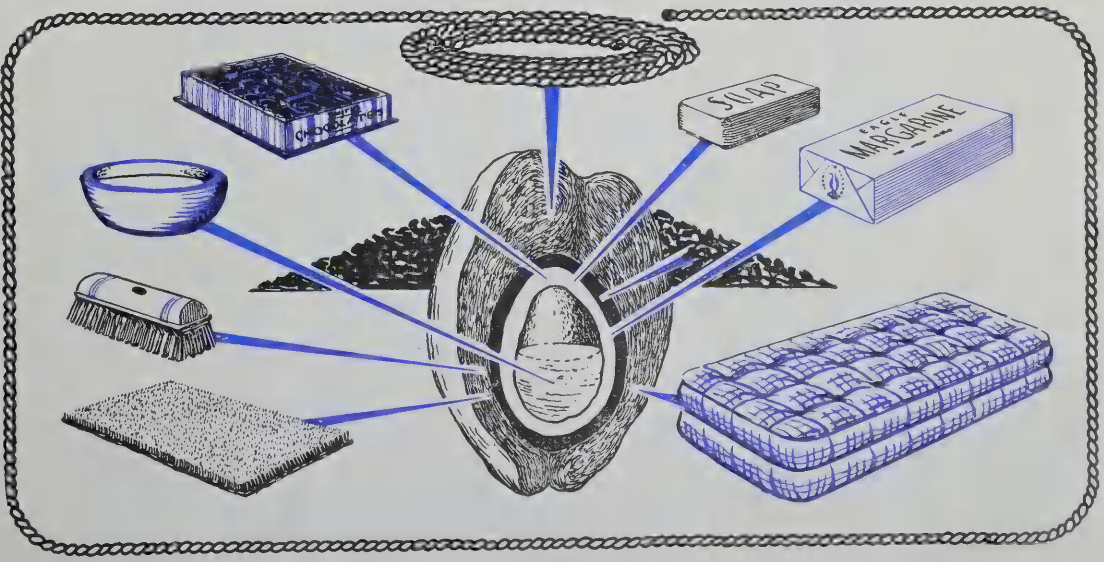


The Samoan islands form a group about 15° south of the equator. The largest of the three main islands is less than 50 miles long. All have volcanic peaks whose lower slopes are forested. Coral reefs extend for up to a mile from the shore.

The Samoans are expert sailors. They fish in the deep seas and make voyages to distant islands in their sailing canoes. These are usually fitted with an outrigger to make them less liable to capsize. Young people fish with spears in the shallow pools of the fringing reefs. Their main vegetable foods are taro, breadfruit, coconuts and bananas. Taro is a plant with a thick fleshy root. It is grown on low terraces irrigated from the brooks that run down from the hills. The roots are grated and made into a kind of porridge. Breadfruit trees are grown near the village houses. Their fruit ripens in all seasons. It is baked on hot stones in shallow pits and can then be cut up and stored for a time. Breadfruit is used on journeys by land and sea instead of taro, which must always be freshly prepared. Pigs, dogs, rats and land crabs are the only land animals; pigs and wild pigeons provide the only meat foods. Copra from the coconuts, bananas and a little cocoa are the only products exported for sale.

The villages consist of groups of huts with thatched roofs supported on wooden pillars. The walls are of woven mats hung between pillars; the floors of waterworn coral. Most household articles are woven from leaf strips, and so also are the walls

36. USING THE COCONUT. The diagram shows some of the things made from various parts of the coconut.

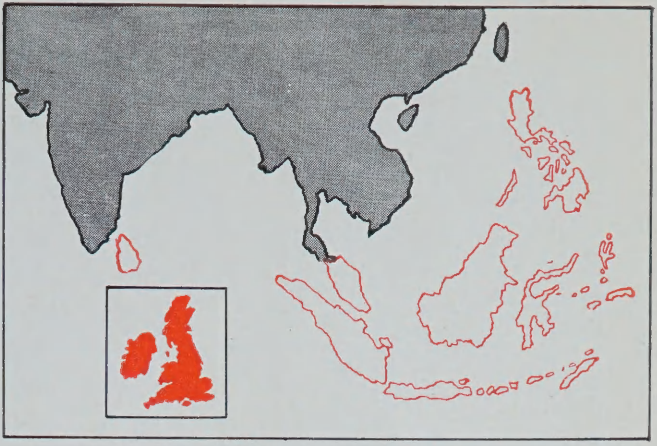


of the huts, the mats on which the people sleep, even the "plates" from which the food is eaten. Before traders brought iron cooking pots, water was heated by dropping heated stones into closely woven baskets. Cooking ovens are shallow pits lined with stones. Wood is burned in them for a time and then the ashes and unburned sticks are removed. The food to be cooked is wrapped tightly in big leaves and a thick covering of green leaves is laid over the pit to keep in the heat until cooking is finished. A kind of cloth called *tapa* is made from the inner bark of a tree. This is cut in strips, which are soaked in water and then laid side by side with their edges overlapping. With repeated soaking and beating quite large sheets of "cloth" are made in this way and then decorated with painted or stamped patterns. Now that cotton cloths can be got from the traders, the tapa cloaks are only worn on ceremonial occasions. Like other Pacific islanders, the Samoans learned to supply nearly all their needs from the sea and the forest.

Describe the different parts of a coconut. How can each part be used?

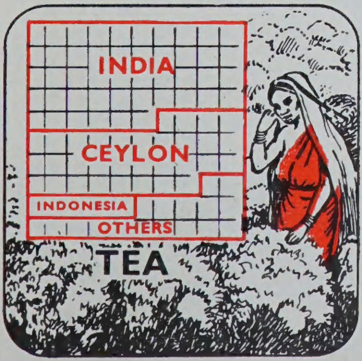
37. SUGAR GROWING IN FIJI. Many Indians have come to the larger South Pacific Islands. Here a young Indian cane-grower is being advised about the cultivation of his crop.

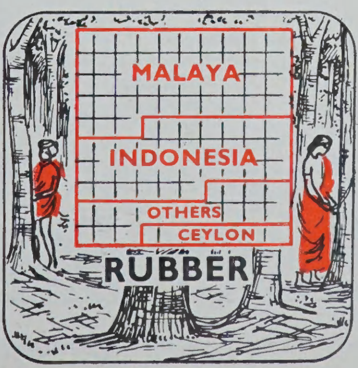
THE SUMMING UP

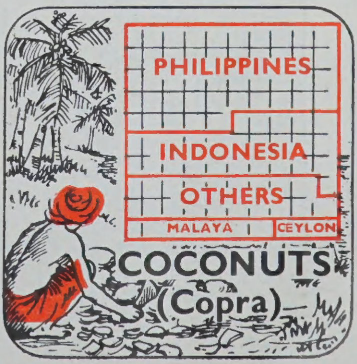


THE first Europeans to visit the islands of south-east Asia were seeking to buy the spices that grew there. Today more useful things such as tea, rubber and coconuts are harvested and tin ore is mined. All the islands are hot and rainy and most of them have many forest-covered mountains. In the East Indies and the Philippines there are numerous volcanoes whose ashes soon change into very fertile soil. The mountain slopes are frequently terraced to form easily cultivated and watered plots. The mountain soils have been washed down by the rain and rivers into the valleys and form marshy lowlands along the coasts. On these alluvial soils are grown rice, the main food of all the island peoples, and sugar cane.

Many different peoples live in the islands. Where the forests have not yet been cleared for cultivation, as in Borneo and Sumatra, there are people like the Dyaks; they live in the old ways by fishing and hunting without much crop growing. Many of the native people of Ceylon, Malaya, Java and the Philippines farm plots mainly for their own food. Large areas have been cleared for tea, rubber, sugar cane and coconut plantations, and on these large numbers of workers are employed. In Ceylon and Malaya many plantation workers are Indians. Shopkeepers and traders (except in Ceylon) are often Chinese, and so are many tin miners. The seas around them have brought many peoples to these islands.







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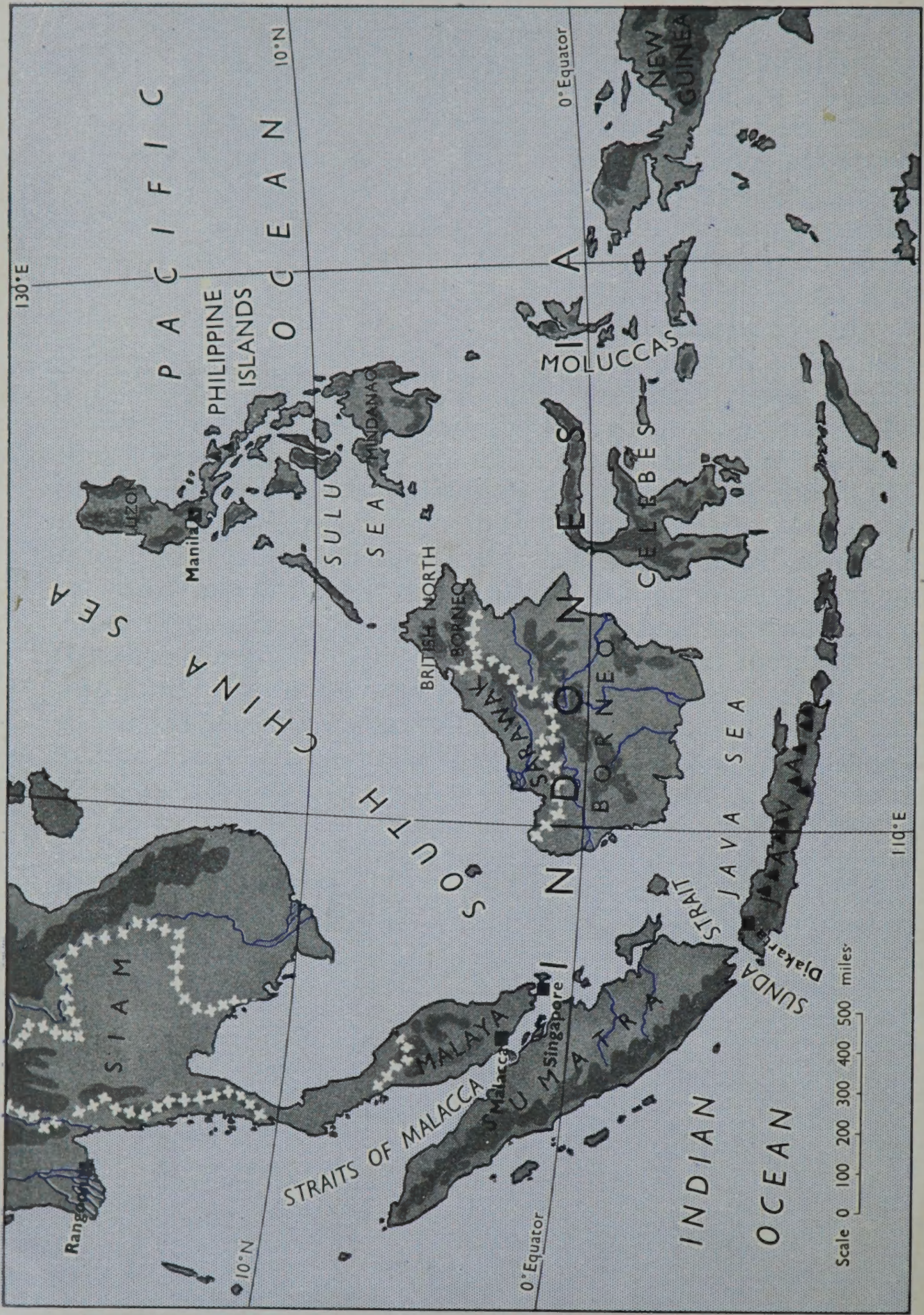

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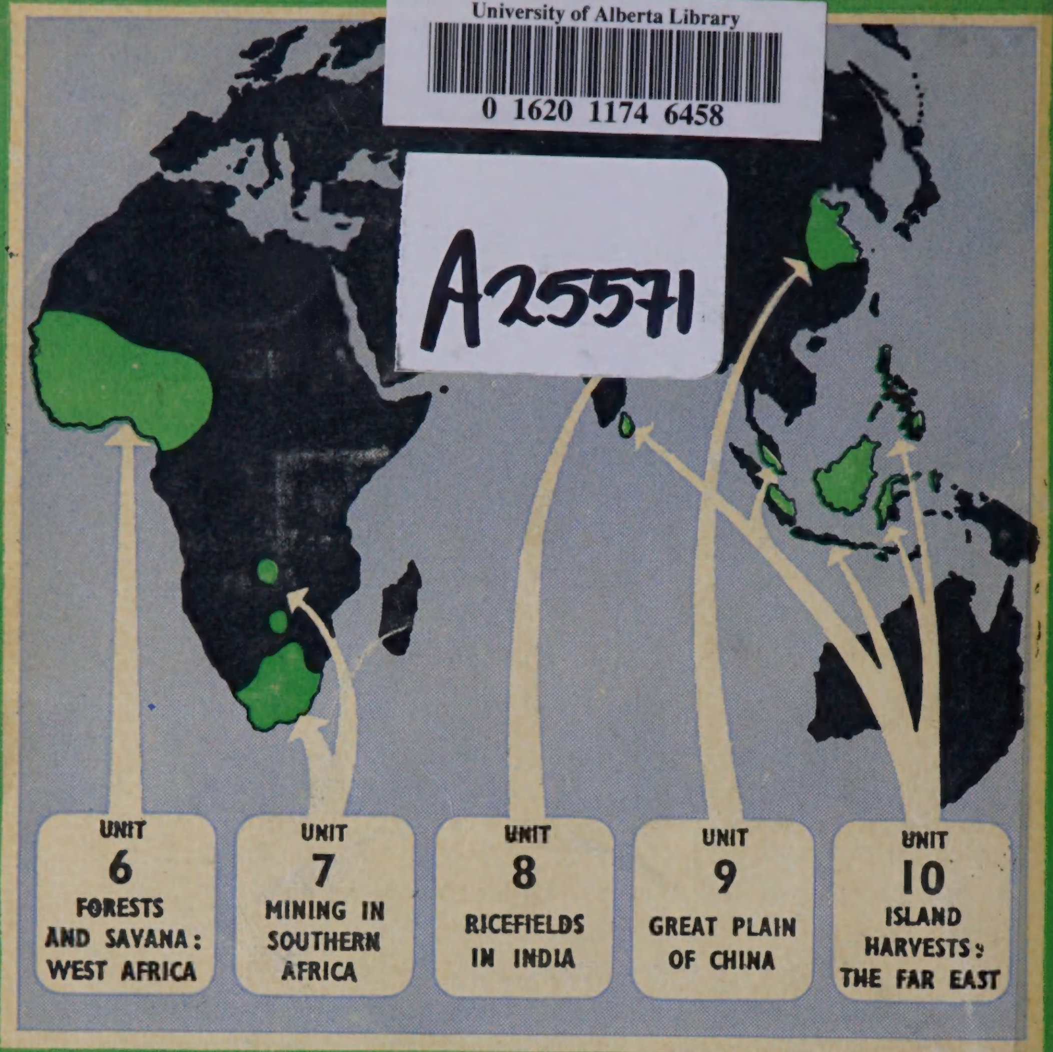
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